

I. The EPA's Evaluation

A. EPA's Evaluation of Utah's SIP Revisions

(i) R307-110-10

Section R307-110-10 incorporates the amendments to Section IX.A into state rules, thereby making them effective as a matter of state law. This is a ministerial provision and does not by itself include any SIP measures.

(ii) R307-110-31

Section R307-110-31 incorporates the amendments to Section X. Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability in state rules, thereby making them effective as a matter of state law. This is a ministerial provision and does not by itself include any control measures.

(iii) R307-110-36

Section R307-110-36 incorporates the amendments to Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County into state rules, thereby making them effective as a matter of state law. This is a ministerial provision and does not by itself include any control measures.

(iv) SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

The revisions to "Part A, General Requirements and Applicability" included additions to section "1. General Requirements" that addressed revisions to Utah Code Annotated (UCA) Section 41-6a-1642 that involved:

- (1) An amendment in 2013 to include the date that notice is required and the date the enactment, change, or repeal will take effect if a county legislative body enacts, changes,

or repeals the local emissions compliance fee. Section 41-6a-1642 provides that for a county required to implement a new vehicle emissions inspection and maintenance program, but for which no current federally approved SIP exists, a vehicle shall be tested at a frequency determined by the county legislative body, in consultation with the Utah Air Quality Board (UAQB), that is necessary to comply with federal law or attain or maintain any National Ambient Air Quality Standard (NAAQS) and establishes procedures and notice requirements for a county legislative body to establish or change the frequency of a vehicle emissions inspection and maintenance program.

(2) An amendment in 2017 to UCA Section 41-6a-1642 to allows a county that imposes a local emissions compliance fee to use revenue generated from the fee to promote programs to maintain a NAAQS. At that time the Utah Legislature also amended 41-6a-1642 to state that vehicles may not be denied registration based solely on the presence of a defeat device covered in the Volkswagen partial consent decrees or an EPA-approved vehicle emission modification.

(3) An amendment in 2019 regarding “Notification of Programmatic Changes”: This involved the legislative body of a county as identified in UCA 41-6a-1642 (1) shall consult with the Director of the Utah Division of Air Quality (UDAQ) prior to their public comment process for any amendments to their I/M regulations or ordinances. Consultation is to include a written notice describing the proposed changes to the I/M program.

The revisions to “Part A, General Requirements and Applicability” also included changes to section “3. General Summary” that addressed minor wording clarifications to the subsections entitled “*Out-of-state exemption*” and “*Vehicle inspection report.*”

We have evaluated the Governor's November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part A and are proposing approval.

(v) *SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County*

Section X, Part F of the Utah SIP addresses the provisions and requirements for the implementation of the motor vehicle I/M program in Cache County, Utah. Section X, Part F of the SIP contains three main components for the Cache County I/M program: (1) the SIP language for Section X Part F that addresses applicability, a general description of the Cache County I/M program, and the time frame for implementation of the I/M program; (2) the Cache County Emission Inspection/Maintenance Program Ordinance 2018-15; and (3) the Bear River Health Department's Regulation 2013-04. We note that the Cache County Ordinance 2018-15 contains language which delegates the implementation of the Cache County I/M program to the Bear River Health Department (BRHD).

The revisions to the Cache I/M program under the heading "1. Applicability" note that the Cache I/M program was approved by the EPA on October 9, 2015 (80 FR 54237), and that the I/M program has been fully implemented.

The revisions to the Cache I/M program under the heading "2. Description of Cache I/M programs" involved:

- (1) "*Subject Fleet*": The subject fleet for an I/M inspection was changed from 1969 and newer to 1996 and newer. This change reflects the County's revision to its I/M program to remove the Two Speed Idle (TSI) test for vehicles 1995 and older. Our proposed approval of this I/M program relaxation is discussed further below in section *vii*.

(2) “*Test Frequency*”: This section was also revised to reflect that model year 1996 and newer vehicles are subject to a biennial I/M test. This revision language also shows the removal of a required I/M test for 1995 and older vehicles.

(3) “*Test Equipment*”: This section was modified to remove the phrase “Analyzer calibration specifications” and replace that with “Certified testing equipment.”

(4) “*Test Procedures*”: This section was revised to remove the TSI test for 1995 and older vehicles and to remove the County’s TSI test for 1996 to 2007 medium duty vehicles and 2008 and newer heavy-duty vehicles. As noted above, we provide additional discussion on this I/M program relaxation in section *vii* below.

The revisions to the Cache I/M program under the heading “3. I/M SIP Implementation” involved the following new language:

(1) This section notes that the I/M program ordinance, regulations, policies, procedures, and activities specified in the I/M SIP revision shall be implemented by January 1, 2021.

(vi) *Revisions to Cache County’s “ORDINANCE 2013-04 IMPLEMENTATION OF A VEHICLE EMISSIONS AND MAINTENANCE PROGRAM IN CACHE COUNTY”*

The revisions involved:

(1) Revisions to the table of contents that reflect the removal of the TSI test in 2021 and subsequent subsections renumbering.

(2) Revisions to section “1.0 Definitions” to remove several definitions and to modify and add several definitions.

(3) Revisions to section “2.0 Purpose” to clarify the ordinance complies with applicable federal requirements and to indicate the ordinance complies with Cache County Code Chapter 10.20.

- (4) Revisions to section “3.0 Authority and Jurisdiction of the Department” to revise subsections to indicate the authority is as per Cache County Code Chapter 10.20 and its subdivisions.
- (5) Revisions to section “4.0 Powers and Duties” to remove unneeded references to Technical Bulletins and to include “Certified Testing “Equipment” in place of “testing equipment.”
- (6) Revisions to section “5.0 Scope” to remove the unneeded reference to Technical Bulletins.
- (7) Revisions to section “6.0 General Provisions” to update the applicability to vehicles registered in Cache County or principally operated there. Adding references to Cache County Code Chapter 10.20 and its applicable subdivisions. Updating the reference to UAC Section 41-6a-1642(10). Revising the list of vehicles that are exempted from inspection and maintenance (I/M) testing. Clarifying the required I/M testing station signs. Inserting a new “Compliance Assurance List” section 6.8 with its requirements.
- (8) Revisions to section “7.0 Permit Requirements of the Vehicle Emissions I/M Program Station” unneeded language relevant to TSI testing and adding language that a wireless internet connection may be required.
- (9) Revisions to section “8.0 Training and Certification of Inspectors” adding “Certified Testing Equipment” where “test equipment” previously appeared. Removal of unneeded language relevant to TSI testing. Removing the unneeded requirement for a “hands on” test. Addition of language in new section 8.4.3 that an emission inspection certificate would not be issued to an inspector applying in Cache County who has a revoked or suspended certificate in another county.

(10) Revisions to section “9.0 Inspection Procedure” involved the removal of most of the inspection procedures from this section and placing them instead in the revised Appendix D. “Test Procedures.” In addition, language relating to the TSI test was removed and clarifying language referencing a “Certified Emissions Inspector” and “Certified Testing Equipment” were added. Other revisions were made regarding “Waivers,” emissions related repairs, and language in the new section 9.6 regarding the exploration of new emission inspection technologies which would be vetted, and approved, with Cache County, the state, and the EPA.

(11) Revisions to section “10.0 Engine Switching” involved clarification of the term “EPA policy” by including the reference to the specific EPA policy (i.e., the EPA’s March 1991 engine switching Fact Sheet and its September 1997 Memorandum 1a) and language clarifying the requirements that a vehicle with an engine that was switched meet the emission inspection requirements of Section 6.0.

(12) Revisions to section “11.0 Specifications for Certified Testing Equipment” were the removal of previous applicable requirements for calibration gases, gas calibration with leak checks, and warranty and maintenance requirements as these provisions were only applicable to the TSI test.

(13) Revisions to section “12.0 Quality Assurance” involved updated references to “Certified Testing Equipment.”

(14) Revisions to prior section “13.0 Cutpoint Standards for Motor Vehicle Exhaust Gases” involved the removal of this section as it was only applicable to the TSI test.

(15) Revisions to renumbered section “13.0 Disciplinary Penalties and Right to Appeal” involved renumbering of the subsections and the replacement of the term “audit” with “inspection.”

(16) Revisions to renumbered section “14.0 Penalty” involved the renumbering of the subsections a new subsection 14.6 that states the Department shall request that the Utah Division of Motor Vehicles (DMV) revoke the registration of vehicle that is unable to meet the required emissions standards or if the vehicle has not complied with the required emissions testing requirements of UAC Section 41-1a-110(6).

(17) Revisions to renumbered section “15.0 Severability” only involved the renumbering of the section.

(18) Revisions to renumbered section “16.0 Effective Date” involved the renumbering of the section and change from the prior effective date of May 27, 2015 to January 1, 2021.

(19) Revisions to Appendix A only removed the reference to the fee for a TSI test.

(20) Revisions to Appendix B were the removal of Appendix B in its entirety, as it related to motor vehicle emissions cutpoints applicable to the TSI test. The Appendix now titled as “Reserved.”

(21) Revisions to Appendix D “Test Procedures” involved the relocation of most of the On-Board Diagnostic (OBD) testing procedures to Appendix D that were previously located in section “9.0 Inspection Procedure.” Additional language, regarding the OBD test procedures, was included that clarifies, updates, and supplements the prior OBD test procedures language in the prior Appendix D. Terms were updated to reflect “Certified Emissions Equipment” and “Certified Emissions Inspector.” Provisions were added for a “Compliance Assurance Inspection” for a vehicle and for a “Referee Inspection” at the

County's I/M Technical Center for vehicles having difficulty with the OBD test and also if a vehicle owner believes the I/M the emission test done at an inspection station was not done correctly. The prior Appendix D test procedures for the TSI were removed.

(22) Revisions to Appendix E "Certified Testing Equipment Standards" involved the removal of "Technical Specifications and Calibration Gas" from the Appendix title. All provisions and requirements for the TSI test were removed. Only the necessary provisions and requirements for the OBD test were retained and updated.

(23) Revisions to Appendix F "Waivers for "Not Ready" Vehicles involved clarifications to the provisions for the second and third tests, additional language regarding statements about the vehicle from the vehicle manufacturer's dealership repair station, and a new item number 6 addressing cost requirements for a waiver.

(24) Revisions to Appendix G "Engine Switching" were the removal of Appendix G in its entirety. The revised, allowable engine switching provisions were incorporated into section 10.0 above "10.0 Engine Switching."

We have evaluated the Governor's November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part F and are proposing approval.

(vii) *Revisions to Cache County's "ORDINANCE 2013-04 IMPLEMENTATION OF A VEHICLE EMISSIONS AND MAINTENANCE PROGRAM IN CACHE COUNTY" for the removal of the TSI test in 2021.*

In December 2018, the BRHD proposed to the Cache County Council to amend the Cache County vehicle emissions and maintenance program. The BRHD proposal was to discontinue the TSI test for vehicles 1995 and older due to a diminishing fleet of older light duty gasoline vehicles participating within the program combined with increasing cost of maintaining

the TSI testing equipment. The emission reductions benefit from these older vehicles was minimal compared to the resources required to operate the TSI test and removal of the TSI test would not interfere with attainment and maintenance of the PM_{2.5} 24-hour NAAQS.

The Cache County Council passed the proposal to discontinue the TSI program with an effective date of January 1, 2021. The EPA notes this effective date is reflected as part of the revisions to Ordinance 2013-04 that were discussed above. The TSI testing program covers light duty gasoline vehicles that are older than model year 1995 and was a component of the I/M control strategy used in the Logan, UT-ID PM_{2.5} Nonattainment SIP (December 3, 2014).

The UDAQ, EPA Region 8, and the BRHD coordinated regarding this Cache County I/M program relaxation to ensure that the proposed I/M program changes do not interfere with State and Federal air quality regulations. More specifically, the provisions of section 110(l) of the CAA.

CAA section 110(l) allows for revisions to a SIP to be approved so long as they do not interfere with any applicable requirement concerning attainment and reasonable further progress or any other applicable requirement of this chapter of the CAA. In order to evaluate the removal of the TSI test, the state prepared a CAA section 110(l) demonstration and submitted that demonstration with the Governor's November 5, 2019 submittal.

As described in section 9 and Appendix A of the maintenance plan, the state's CAA section 110(l) demonstration addresses the removal of the I/M Program TSI biennial testing procedure for Cache County in 2021 and shows that there will be minimal impact on the overall on-road mobile source emissions inventory within the Logan, UT-ID PM_{2.5} area. The demonstration considered on-road vehicle emissions from 2021-2026, the 2026 dispersion-modeled midpoint of the maintenance demonstration, and the dispersion modeling for 2035

which is the last year of the maintenance plan. In addition, the CAA section 110(l) demonstration considered non-interference for other NAAQS being monitored in Cache County, Utah.

The state concluded that the removal of the TSI test will not interfere with the ability of the Logan, UT-ID area to continue to attain the 24-hour PM_{2.5} NAAQS despite a very small increase in direct PM_{2.5}, NO_x, and VOC emissions. The state's analysis considered emissions credit assigned to the overall I/M program, including On Board Diagnostic (OBD) and TSI test, within Cache County within the 2021-2026 period and compared it to the emissions credit without the TSI program (OBD only). The mobile source emission estimates were based on meteorological conditions that occurred during three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. Inventory estimations were created at the county level representing an average January weekday. The emission estimates were based on the EPA-approved MOVES2014b (May 2017 version) emissions model.

In addition, the demonstration also considered PM_{2.5} ambient air quality monitoring data from the Smithfield, Cache County site and non-interference with the other five NAAQS (40 CFR 50). We note the state's full CAA section 110(l) demonstration is included as part of the Governor's November 1, 2019 submittal and is also provided in the docket to this action.

In conclusion, the EPA's evaluation finds that the state's CAA 110(l) demonstration regarding the removal of the I/M TSI for Cache County, Utah in 2021 has a minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} area from 2021-2026. Further, the state's maintenance plan dispersion modeling for both 2026 and 2035 continues to show maintenance of the PM_{2.5} 24-hour NAAQS even with this I/M program relaxation. In addition, the state has documented the removal of the TSI test in 2021 will not impact the other NAAQS.

Therefore, we are proposing approval of the removal to of the TSI test component of the BRHD's Ordinance 2013-04 I/M program in 2021 for vehicles 1995 and older.

-- TRANSPORTATION CONFORMITY --

A. Transportation Conformity and Motor Vehicle Emission Budgets.

1. Requirements for Transportation Conformity and Motor Vehicle Emissions Budgets (MVEB).

Transportation conformity is required by section 176(c) of the CAA. The EPA's conformity rule at 40 CFR 93, Subpart A requires that transportation plans, programs, and projects conform to SIPs and establishes the criteria and procedures for determining whether or not they conform. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS. To effectuate its purpose, the EPA's conformity rule requires a demonstration that emissions from a Metropolitan Planning Organization's (MPO) Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), involving Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) funding or approval, are consistent with the MVEB(s) contained in a control strategy SIP revision or maintenance plan (40 CFR 93.101, 93.118, and 93.124). A MVEB is defined as the level of mobile source emissions of a pollutant relied upon in the attainment or maintenance demonstration to attain or maintain compliance with the NAAQS in the nonattainment or maintenance area. Further information concerning the EPA's interpretations regarding MVEBs can be found in the preamble to the EPA's November 24, 1993, transportation conformity rule (see 58 FR 62193 – 62196).

The EPA notes that a PM_{2.5} maintenance plan should identify MVEBs for direct PM_{2.5}, NO_x and all other PM_{2.5} precursors whose on-road mobile source emissions are determined to

significantly contribute to PM_{2.5} levels in the area. We note that for the Logan, UT-ID PM_{2.5} maintenance plan SIP revision, the UDAQ also identified volatile organic compounds (VOCs) as a precursor to the formation of PM_{2.5} in the Logan, UT-ID PM_{2.5} area. For direct PM_{2.5} SIP MVEBs, the MVEB should include direct PM_{2.5} motor vehicle emissions from tailpipes, brake wear, and tire wear. In addition, a state must also consider whether re-entrained road is a significant contributor and should be included in the direct PM_{2.5} MVEB.¹ With respect to this requirement, the EPA reviewed information, data, and an analysis from the UDAQ that sufficiently documented that re-entrained road dust emissions were negligible and meet the criteria of 40 CFR 93.102(b)(3) for not needing to be included in the direct PM_{2.5} MVEB. The EPA concurred with the state's analysis via email dated July 20, 2011 from Tim Russ (EPA Region 8) to the UDAQ².

2. MVEBs Identified in the Logan, UT-ID PM_{2.5} Maintenance Plan SIP.

Utah's Logan, UT-ID PM_{2.5} maintenance plan SIP revision was submitted to meet the requirements of CAA section 175A and relevant EPA guidance (Crystal - i.e., Calcagni 1992 redesignation guidance memorandum?). The state's maintenance plan specified the maximum mobile source emissions of PM_{2.5}, NO_x and VOC allowed in the final maintenance year which is 2035. These mobile source emissions were then initially identified by the state as the maintenance plan's MVEBs. However, through additional sensitivity dispersion modeling, the state was able to demonstrate that for 2035, additional mobile sources emissions could be included such that the Logan area could continue to demonstrate maintenance. These additional direct PM_{2.5}, NO_x, and VOC mobile source emissions were then identified as "safety margin"

¹ 40 CFR 93.102(b) and 93.122(f); *see also* conformity rule preamble at 69 FR 40004, 40031-40036 (July 1, 2004).

² "PM_{2.5} Re-entrained Road Dust – Utah Request for Deletion from PM_{2.5} Motor Vehicle Emissions Budget (MVEB): EPA Concurrence" dated July 20, 2011.

(see: 40 CFR 93.101) and were then added to the initial MVEBs to arrive at the final MVEBs. This process of identifying additional “safety margin” was correctly followed by the UDAQ and is as allowed by 40 CFR 93.124(a). The derivation of the MVEBs, with “safety margin,” is described in section 4 “Mobile Source Budget for Purposes of Conformity” of the maintenance plan and section “3.e. On-road Mobile Baseline and Projection Inventories, ii. On-Road MVEB Derivation” of the TSD. As presented in Table IX.A.28.9 of the maintenance plan, the final 2035 MVEBs were 0.2 tpd direct PM_{2.5}, 2.02 tpd NO_x, and 2.18 tpd VOCs.

We note that 40 CFR 93.118(b)(2)(i) indicates that for maintenance plans that do not identify MVEBs for any other year than the last year of the maintenance plan, the demonstration of consistency with the MVEBs by the applicable Metropolitan Planning Organization (MPO) must be accompanied by a qualitative finding that there are no factors which would cause or contribute to a new violation or exacerbate an existing violation in the years before the last year of the maintenance plan.

3. MVEBs Trading, for Purposes of Demonstrating Transportation Conformity, in the Logan, UT-ID PM_{2.5} Maintenance Area.

EPA’s transportation conformity rule allows for the trading between the direct PM_{2.5} and NO_x and VOC precursor MVEBs where the SIP establishes an appropriate mechanism for such trades³. The basis for the trading mechanism is the maintenance plan’s dispersion modeling demonstration, for 2035, which established the relative contribution of the NO_x and VOC precursor pollutants.

As discussed in section 4(a)(ii) “Trading Ratios for Transportation Conformity” of the maintenance plan, the state established a MVEB trading mechanism to allow for future increases

³ 40 CFR 93.124(b)

in on-road mobile sources direct PM_{2.5} emissions to be offset by future decreases in NO_x precursor emissions from on-road mobile sources. This ratio was developed from data from the air quality maintenance plan's dispersion modeling. Section 4(a)(ii) of the maintenance plan and section 6 "Miscellaneous a. Trading Ratio" of the maintenance plan's TSD provide the following modeling-derived trading ratio: Future increases in on-road mobile sources direct PM_{2.5} emissions may be offset with future decreases in NO_x emissions from on-road mobile sources at a NO_x to PM_{2.5} ratio of 3.4 to 1.

The maintenance plan also notes that this trading mechanism will only be used by the Cache MPO for transportation conformity determination analyses for years after 2035. The maintenance plan further notes that to ensure that the trading mechanism does not impact the ability to meet the NO_x budget, the NO_x emission reductions available to supplement the direct PM_{2.5} MVEB shall only be those remaining after the 2035 NO_x MVEB has been met. The maintenance plan further articulates that clear documentation of the calculations used in the MVEB trading are to be included in the conformity determination analysis as prepared by the Cache MPO.

4. Evaluation and Proposed Action.

The EPA has evaluated the Logan, UT-ID PM_{2.5} maintenance plan's emission inventories and maintenance demonstration modeling as described in the sections above. Based on our evaluation, we have determined that the direct PM_{2.5}, NO_x, and VOC MVEBs are appropriately derived from the maintenance plan and are acceptable. We have also evaluated the description and derivation of the MVEB NO_x trading mechanism and the supporting data from the maintenance plan's maintenance demonstration modeling information and TSD and find it acceptable. Therefore, we are proposing to approve the Logan UT-ID PM_{2.5} maintenance plan's

2035 MVEBs of direct PM_{2.5} of 0.2 tons per day (tpd), NO_x of 2.02 tpd, and VOC of 2.18 tpd. In addition, we are also proposing to approve the NO_x to direct PM_{2.5} MVEB trading mechanism as described above and documented in section 4(a)(ii) of the maintenance plan.

BEAR RIVER HEALTH DEPARTMENT

REGULATION NO. 2013-1

**A REGULATION OF THE BEAR RIVER HEALTH DEPARTMENT FOR A VEHICLE
EMISSIONS INSPECTION AND MAINTENANCE PROGRAM**

Adopted by the Bear River Board of Health

May 9, 2013

Updated May 27, 2015

Updated _____, 2019

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1.0 DEFINITIONS

For the purpose of this Regulation, the following terms, phrases, and words shall have the following meanings, unless otherwise defined:

~~Air Intake Systems: Systems that allow for the induction of ambient air, including preheated air into the engine combustion chamber for the purpose of mixing with a fuel for combustion;~~

~~AIR System: (Air Injection Reaction) A system for providing supplementary air into a vehicle's exhaust system to promote further oxidation of HC and CO gases and to assist catalytic reaction;~~

Alternative Fuel: A fuel that is derived from resources other than petroleum. This includes but is not limited to: natural gas, propane, ethanol, and bio-diesel.;

~~Analyzer: See Exhaust Emissions Gas Analyzer;~~

Bi-fuel Vehicle: A vehicle that has two separate fueling systems that enables the vehicle to run on one or the other (ex. Gasoline and natural gas). These vehicles may be switchable or non-switchable.;

Board: See Board of Health.;

Board of Health: The Bear River Board of Health.;

Cache County Council: The elected Cache County Council representatives.;

~~Calibration: The process of establishing or verifying the accuracy of an Exhaust Emissions Gas Analyzer to perform a consistent evaluation of engine exhaust by using different calibration gases having precisely known concentrations;~~

~~Calibration Gases: Gases of accurately known concentration that are used as references for establishing or verifying the calibration curve and accuracy of an Exhaust Emissions Gas Analyzer and are approved by the Department for use.~~

~~Catalytic Converter: A post-combustion device that oxidizes HC and CO gases and/or reduces oxides of nitrogen gases;~~

Certificate of Compliance: A document used in the I/M Program to certify that a vehicle meets all applicable requirements of the program; Proof that a vehicle meets all applicable requirements of the I/M Program. This proof may be sent in an electronic format to the Utah State Tax Commission.

~~Certificate of Waiver: A document used to verify that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met;~~

~~Certification: Assurance by an authorized source, whether it be a laboratory, the manufacturer, the State, or the Department, that a specific product or statement is in fact true and meets all required requirements.~~

~~Certified Emissions Inspector: A person who has successfully completed all certification requirements and has been issued a current, valid Certified Emissions Inspector Certification by the Department.~~

~~Certified Testing Equipment: An official test instrument that has been approved by the Department to test motor vehicles for compliance with this Regulation; this includes the Analyzer as well as the OBD testing portion of the machine;~~

~~CO: Carbon monoxide;~~

~~Compliance: Verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meets all required accreditation requirements;~~

~~Compliance Assurance Inspection: A more detailed emissions inspection performed at the I/M Technical Center. Details of this inspection are found in Appendix D, Test Procedures.~~

~~Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list, as required in Section 6.8 and Appendix D, Test Procedures, shall be inspected at the I/M Technical Center.~~

~~Contractor: The emission inspection system contractor selected by the Department to provide specialized services related to the I/M Program in Cache County.~~

~~Council: See Cache County Council.~~

~~County: Cache County, Utah.~~

~~Custom Vehicle: A motor vehicle that meets the requirements of Section 41-6a-1507, Utah Code Annotated, 1953 as amended;~~

~~Cutpoints: The maximum allowable concentration of carbon monoxide (CO) and hydrocarbons (HC) for a given weight class and model year of a motor vehicle, as~~

~~provided by this Regulation, using an approved infrared Exhaust Emissions Gas Analyzer;~~

Department: The Bear River Health Department;

Director: The Director of the Bear River Health Department or his authorized representative;

DLC: Data Link Connector used in OBD applications is a 16 pin connector used by scan tools and other emission diagnostic equipment to communicate with the vehicle's computer for the purpose of collecting emissions related data;

DTC: Diagnostic Trouble Code is a standardized 5 digit code that is used to identify a specific fault that has occurred or is occurring in a vehicle;

Dual Fuel Vehicle: See Flexible Fuel Vehicle;

~~EGR System: The Exhaust Gas Recirculation System—An emissions control system that recycles or recirculates a portion of the exhaust gases back to the engine combustion chambers;~~

Emissions Control Systems: Parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the sole or primary purpose of reducing emissions;

EPA: The United States Environmental Protection Agency.

~~Exhaust Emissions Gas Analyzer: An instrument that is capable of measuring the concentrations of certain air contaminants in the exhaust gas emanating from a motor vehicle which is approved by the Department for this use in accordance with this Regulation as an official test instrument;~~

~~Evaporative Control System: An emissions control system that prevents the escape of fuel vapors from the fuel tank or air cleaner and stores them in a charcoal canister to be burned in the combustion chamber;~~

Flexible Fuel Vehicle: Also called Flex-Fuel Vehicle. A vehicle that is designed to run on more than one fuel, usually gasoline blended with ethanol (0-85%), and both fuels are stored in the same common tank;

~~Gas Calibration Check: A procedure using known concentrations of HC and CO calibration gases to verify the accuracy of an Analyzer in measuring HC and CO;~~

HC: Hydrocarbons;

~~Idle: A condition where the vehicle engine is warm and running at the rate specified by the manufacturer's curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position. This condition must be achieved without placing a load on the vehicle to decrease the RPM to the specified rate;~~

I/M Program: See Vehicle Emissions Inspection and Maintenance Program.

I/M Program Station: A stationary Vehicle Emissions Inspection and Maintenance Station that qualifies and has a valid permit, issued by the Department, to operate as an emissions inspection and maintenance station in the I/M Program.

~~I/M Technical Center: A facility operated by the Department for technical or administrative support of the I/M Program.~~

Inspection: An official vehicle emissions test performed for the purpose of issuing a Certificate of Compliance or Certificate of Waiver.

Inspector: A Certified Emissions Inspector.

MIL: Malfunction Indicator Light is an indicator located on the instrument panel that notifies the operator of an emissions fault.

Motor Vehicle: A self-propelled motorized vehicle with an internal combustion powered engine which is licensed for operation on public roads and/or streets. Motor Vehicles exempted from the inspection requirements of this Regulation are listed in Section 6.4 of this Regulation.

Non-certified Inspector: Any person who has not been certified by the Department to perform official emissions tests.

OBD: On Board Diagnostic refers to a vehicle's monitoring and diagnostic capabilities of its emissions systems.

~~PCV System: Positive Crankcase Ventilation System—an emissions control system which returns crankcase vapors and blowby gases to the combustion chamber to be burned;~~

~~Primary Residence: Is the place where an individual intends to permanently reside, maintains a permanent residence more than six (6) months during a calendar year, or where an individual lives more than six (6) months during a calendar year;~~

Publicly-owned Vehicles: A motor vehicle owned by a government entity, including but not limited to the federal government or any agency thereof, the State of Utah or any agency or political subdivision thereof.;

Readiness: Readiness is used to identify the state of a vehicle's emissions monitors as they are tested. Readiness does not indicate whether the monitors passed or failed the test, it only indicates whether or not the test has been run for any particular monitor.;

Referee Inspection: An emissions inspection performed at the I/M Technical Center for the purpose of resolving disputes or overriding inspection criteria for cause.

Regulation: A regulation of the Bear River Health Department for a vehicle emissions inspection and maintenance program.

Rejection: A condition where a vehicle subject to an OBD inspection has not met the Readiness requirements as set forth by this Regulation. The vehicle has not failed the inspection but it must be driven additional miles until Readiness monitors are set "ready" or repairs have been made allowing readiness flags to set ready.

Station: An I/M Program Station.;

Technical Bulletin: ~~A document issued to Certified Emissions Inspectors and/or I/M Program Stations by the Department to update, clarify or establish policies and/or procedures for their implementation in the I/M Program;~~

Training Program: A formal program administered, conducted, or approved by the Department for the education of emission inspectors in basic emission control technology, inspection procedures, diagnosis and repair of emissions-related problems, I/M Program policies, procedures, and this Regulation.;

Two-Speed Idle: ~~A condition where the vehicle engine is warm and running at a high speed rate of 2200-2800 RPMs and then a low rate of 350-1200 RPMs;~~

Vehicle Emission Control Information Label (VECI Label): An EPA required label found on a vehicle that contains the manufacturer's name and trademark, and an unconditional statement of compliance with EPA emission regulations. The label often contains a list of emissions control devices found on the vehicle.

Vehicle Emissions Inspection and Maintenance Program: The program established by the Department pursuant to Section 41-6a-1642 Utah Code

Annotated, 1953, as amended, and Cache County Code Chapter 10.20, Ordinance 2013-04;

~~Vintage Vehicle: A motor vehicle that meets the requirements of Section 41-21-1 Utah Code Annotated, 1953 as amended;~~

~~Waiver: Documentation of proof that a vehicle which has not been able to meet applicable test requirements, has met the applicable repair and/or adjustment requirements of Section 9.5 of this Regulation.~~

2.0 PURPOSE

It is the purpose of this Regulation to reduce air pollution levels in Cache County by requiring inspections of in-use motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 2.1 Protect and promote the public health, safety, and welfare;
- 2.2 Improve air quality;
- 2.3 ~~Meet or exceed the minimum design and performance requirements for~~ Comply with the applicable federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S;
- 2.4 ~~Comply with the law enacted by the Legislature of the State of Utah, Sections 41-6a-1642 Utah Code Annotated, 1953, as amended; and;~~
- 2.5 ~~Comply with Cache County Code Chapter 10.20, Vehicle Emissions and Maintenance Program, as amended Ordinance 2013-04.~~

3.0 AUTHORITY AND JURISDICTION OF THE DEPARTMENT

3.1 ~~Under Chapter 10.20.020(C) of Cache County Code Section 2.3 of Cache County Ordinance 2013-04, the Cache County Council (hereafter, Council) delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River Board of Health (hereafter Board), to address all issues pertaining to the adoption and administration of the Vehicle Emissions Inspection and Maintenance Program (hereafter I/M Program).~~

3.2 ~~Under Chapter 10.20.020(D) of Cache County Code Section 2.4 of Cache County Ordinance 2013-04, the Council directs the Board to adopt and promulgate rules~~

regulations to ensure compliance with State Implementation Plan requirements with respect to an I/M Program.

3.3 The Board is authorized to make standards and regulations pursuant to Section 26A-1-121(1) of the Utah Code Annotated, 1953, as amended.

3.4 The Board is authorized to establish and collect fees pursuant to Section 26A-1-114(1)(h)(i) of the Utah Code Annotated, 1953, as amended.

3.5 All aspects of the I/M Program within Cache County enumerated in Section 2.0 of this Regulation shall be subject to the direction and control of the Bear River Health Department (hereafter Department).

4.0 POWERS AND DUTIES

4.1 The Department shall be responsible for the enforcement and administration of this Regulation and any other powers vested in it by law and shall:

4.1.1 Make policies and procedures necessary to ensure that the provisions of this Regulation are met and that the purposes of this Regulation are accomplished;

4.1.2 Require the submission of information, reports, plans, and specifications from I/M Program Stations as necessary to implement the provisions, requirements, and standards of this Regulation;

4.1.3 Issue permits, certifications, and charge fees as necessary to implement the provisions, requirements, and standards of this Regulation; and

4.1.4 Perform audits of any I/M Program Station, issue orders and/or notices, hold hearings, and levy administrative penalties, as necessary to effect the purposes of this Regulation.

4.2 The Department may suspend, revoke, or deny a permit, subject to the Penalty Schedule in Appendix C, of an I/M Program Station and/or require the surrender of the permit of such I/M Program Station upon showing that:

4.2.1 A vehicle was inspected and issued a Certificate of Compliance by the station personnel that did not, at the time of inspection, comply with all applicable policies, procedures, ~~Technical Bulletins,~~ and this Regulation;

4.2.2 A vehicle was inspected and ~~rejected~~ failed by the I/M Program Station when, in fact, the vehicle was determined by the Department to be in such condition that it did comply with the requirements of this Regulation;

~~4.2.3 The I/M Program Station is not open and available to perform inspections during a major portion of the normal business hours of 8:00 AM to 5:00 PM Mondays through Fridays (except I/M Program Stations which only test their own vehicles);~~

4.2.43 The I/M Program Station has violated any provisions of this Regulation, or any Rule, Regulation, or Department policy properly promulgated for the operation of an I/M Program Station;

~~4.2.5 The I/M Program Station was not equipped as required by Section 7.0 of this Regulation;~~

4.2.64 The I/M Program Station is not operating from a location specified on the permit;

~~4.2.75 An official inspection was done by a Non-certified Inspector or a Non-certified Inspector has gained access to the official testing portion of the Certified Testing Equipment test equipment or a non-certified inspector signed a Certificate of Compliance;~~

4.2.86 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment test equipment did not perform the inspection;

4.2.97 The Certified Testing Equipment computerized test equipment has been tampered with or altered in any way contrary to the certification and maintenance requirements of the Certified Testing Equipment test equipment;

~~4.2.108~~ The I/M Program Station denies access to a representative of the Department to conduct an audit or other necessary business during regular business hours;

~~4.2.11 The I/M fee signage procedures are not followed as specified in Section 6.6; or~~

~~4.2.122~~ The I/M fee has been determined by the Department to be discriminatory in that different fees are assessed dependent upon vehicle ownership, vehicle make or model, owner residence, etc; or;

4.2.130 The I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.3 The Department may suspend, revoke, or deny the certificate of a Certified Emissions Inspector, subject to the Penalty Schedule in Appendix C, and require the surrender of this certificate upon showing that:

4.3.1 The Certified Emissions Inspector caused a Certificate of Compliance to be issued without an approved inspection being made;

4.3.2 The Certified Emissions Inspector denied the issuance of a Certificate of Compliance to a vehicle that, at the time of inspection, complied with the law for issuance of said certificate;

4.3.3 The Certified Emissions Inspector issued a Certificate of Compliance to a vehicle that, at the time of issuance, was in such a condition that it did not comply with this Regulation;

4.3.4 Inspections were performed by the Certified Emissions Inspector, but not in accordance with applicable policies, procedures, ~~Technical Bulletins~~, and this Regulation;

4.3.5 The Certified Emissions Inspector allowed a ~~Non-certified~~ Inspector to perform an official ~~Inspection/I/M test~~ or gain access to the official testing portion of the ~~Certified Testing Equipment test equipment~~;

4.3.6 The Certified Emissions Inspector logged in to the official testing portion of the ~~Certified Testing Equipment test equipment~~ ~~did not perform the inspection~~;

4.3.7 The Certified Emissions Inspector signed an inspection form or certificate stating that he had performed the emissions test when, in fact, he did not; or

4.3.8 The Certified Emissions Inspector employed at an I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.4 The Department shall respond, according to the policies and procedures of the Department, to public complaints regarding the fairness and integrity of the inspections they receive and shall provide a method that inspection results may be challenged if there is a reason to believe them to be inaccurate.

5.0 SCOPE

It shall be unlawful for any person to fail to comply with any policy, procedure, ~~Technical Bulletin~~, or regulation promulgated by the Department, unless expressly waived by this Regulation.

6.0 GENERAL PROVISIONS

Subject to the exceptions in Section 6.4 and pursuant to the schedule in Section 6.1, ~~individuals with their primary residence in Cache County must register their motor vehicles in Cache County and motor vehicles (of model years 1969 and newer) that are or will be registered in Cache County, or principally operated from a facility within Cache County shall be subject to an emission inspection performed by an I/M Program Station or other entity approved by the Director.~~ Owners of vehicles that meet the requirements of Section 6.2 or 6.3 shall comply with the inspection requirements regardless of the county of registration.

6.1 ~~Beginning January 1, 2014 in~~ Motor vehicles are subject to a biennial emissions inspection. Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

6.1.1 A Certificate of Compliance, ~~Certificate of Waiver,~~ or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in odd-numbered years for a vehicle with an odd-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.2 A Certificate of Compliance, ~~Certificate of Waiver,~~ or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in even-numbered years for a vehicle with an even-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.3 The Air Pollution Control Fee shall be paid annually, as per Chapter 10.20.040(E) of Cache County Code ~~Section 4.5 of Cache County Ordinance 2013-04,~~ (see also Section 6.7 of this Regulation) as conditions precedent to registration or renewal of registration of a motor vehicle.

6.1.4 A Certificate of Compliance shall be valid for a period of time in accordance with Section 41-6a-1642(10) ~~41-1a-205~~ Utah Code Annotated, 1953, as amended.

6.2 Publicly-Owned Vehicles. Owners of publicly-owned vehicles shall comply with the inspection program requirements. Federally-owned vehicles and vehicles of employees operated on a federal installation that do not require registration in the State of Utah shall comply with the emissions testing requirements.

6.3 Vehicles of employees and/or students parked at a college or university that do not require registration in Cache County shall comply with the emissions testing requirements as authorized by 41-6a-1642(5)(a) Utah Code Annotated, 1953, as amended.

6.3.1 College or university parking areas that are metered or for which payment is required per use are not subject to the requirements in Section 6.3.

6.4 Vehicle Exemption. The following vehicles are exempt from these emissions testing requirements:

~~6.4.1 Any vehicle of model year 1968 or older;~~

~~6.4.2 All agricultural implements of husbandry and any motor vehicle that qualifies for an exemption as provided by 41-6a-1642(3) and 41-6a-1642(4) Utah Code Annotated, 1953, as amended;~~

~~6.4.1 An implement of husbandry as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.2 A motor vehicle that meets the definition of a farm truck as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended, and has a gross vehicle weight rating of 12,001 pounds or more;~~

~~6.4.3 A vintage vehicle as defined in Section 41-21-1 Utah Code Annotated, 1953, as amended;~~

~~6.4.4 A custom vehicle as defined in Section 41-6a-1507 Utah Code Annotated, 1953, as amended;~~

~~6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;~~

~~6.4.6 A motorcycle as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.7 A motor vehicle powered solely by electric power;~~

~~6.4.8 Any gasoline or non-diesel based Alternative Fuel powered vehicle of model year 1995 or older;~~

~~6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;~~

6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;

6.4.3 Any vehicle used for maintenance or construction and not designed or licensed to operate on the highway;

6.4.4 Any motorcycle or motor driven cycle (including vehicles which operate with an engine normally used in a motorcycle);

6.4.5 Any vehicle that operates exclusively on electricity;

6.4.6 Any motor vehicle which qualifies for legislative exemptions;

6.4.7 Tactical military vehicles;

6.4.8 Any vintage vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;

6.4.9 Any custom vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;

6.4.101 Any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacturer;

6.4.112 Any diesel or diesel based Alternative Fuel powered vehicle 1997 and older; and

6.4.123 Any diesel or diesel based Alternative Fuel powered vehicle with a GVWR gross vehicle weight rating greater than 14,000 lbs. pounds; and

6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended.

6.5 If a vehicle exempted by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official Inspection it shall be the responsibility of the Certified Emissions Inspector to inform the owner/operator of the vehicle that the vehicle is not required to have an official Inspection. It shall be the responsibility of the Certified Emissions Inspector if a vehicle exempted from this Regulation by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official emission test to inform the owner/operator of the vehicle that the vehicle is not required to have an official emission inspection for vehicle registration purposes.

6.6 Official Signs.

6.6.1 All I/M Program Stations, ~~except those stations authorized to inspect only their own motor vehicles as a fleet inspection station,~~ shall display in a conspicuous location on the premises an official sign provided and approved by the Department;

~~6.6.2 The emission cutpoints, as referenced in Appendix B shall be posted in a conspicuous place on the station's premises;~~

6.6.32 The readiness requirements for an OBD test as referenced in Appendix D shall be posted in a conspicuous place on the station's premises;

6.6.43 The station shall post on a clear and legible sign and in a conspicuous place at the station, the fees charged by that station for the performance of the emissions inspection;

~~6.6.54 The free re-inspection policy as referenced in Section 9.46 shall be posted in a conspicuous place on the station's premises;~~

6.6.65 The signs required by Sections 6.6.1 through 6.6.54 shall be located so as to be easily in the public view.

6.7 Fees.

6.7.1 The fees assessed upon I/M Program Stations and Certified Emissions Inspectors shall be determined according to a fee schedule adopted by the Board. The fee schedule is referenced in Appendix A to this Regulation and may be amended by the Board as necessary.

6.7.2 An Air Pollution Control Fee is hereby assessed upon every motor vehicle registered in Cache County as per Chapter 10.20.040 of Cache County Code ~~Section 4.5 of Cache County Ordinance 2013-04~~. The fee will be assessed annually at the time of registration of the vehicle.

6.7.2.1 This fee assessment is included upon all motorized vehicles including those that are exempted from the inspection requirements of this Regulation by Section 6.4 ~~unless a separate fee is assessed on other motor vehicles by other Board of Health Regulations.~~

6.7.2.2 A motor vehicle that is exempt from the registration fee, and a commercial vehicle with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953, as amended and Chapter 10.20.040 of Cache County Code ~~Section 4.5.2 of Cache County Ordinance 2013-04~~.

6.7.3 I/M Program Stations may charge a fee for the required service. The fee may not exceed, for each vehicle inspected, the amount set by the Board and referenced in Appendix A of this Regulation.

6.7.3.1 The inspection fee pays for a complete inspection leading to a Certificate of Compliance, a Rejection, or a failure. If a vehicle fails, or is rejected from an inspection, the owner/operator is entitled to one free re-inspection if he returns to the I/M Program Station that performed the original inspection within fifteen (15) calendar days from the date of the initial inspection. The I/M Program Station shall extend the fifteen day free re-inspection to accommodate the vehicle owner/operator if the I/M Program Station is unable to schedule the retest of the vehicle within the fifteen day time period. The inspection fee shall be the same whether the vehicle passes or fails the emission test.

6.7.3.2 ~~At the request of the Department, an I/M Program Station shall extend the free retest time for vehicle owners/operators who are unable to complete repairs because of the unavailability of parts to make the necessary repairs.~~

6.7.4 If a vehicle fails the inspection and is within the time and mileage requirements of the federal emissions warranty contained in section 207 of the Federal Clean Air Act, the Certified Emissions Inspector shall inform the owner/operator that he may qualify for warranty coverage of emission related repairs as provided by the vehicle manufacturer and mandated by the Federal Environmental Protection Agency (see 40 CFR Part 85, Subpart V).

6.8 Compliance Assurance List.

6.8.1 The Department reserves the right to recall a vehicle and perform a Compliance Assurance Inspection at the I/M Technical Center for the following reasons:

6.8.1.1 Suspected fraudulent registration;

6.8.1.2 Suspected fraudulent emissions inspection;

6.8.1.3 Suspected tampering of emissions control devices;

6.8.1.4 Violations of Section 41-6a-1626, Utah Code Annotated, 1953, as amended, regarding visible emissions; and

6.8.1.5 Any item listed in Appendix D, Test Procedures, that cause the vehicle to be flagged during an emissions inspection.

6.8.2 The Department shall create and maintain a list of vehicles that are subject to a Compliance Assurance Inspection at the I/M Technical Center.

6.8.2.1 The Compliance Assurance Inspection criteria listed in Appendix D, Test Procedures, shall be followed.

6.8.2.2 A vehicle that passes the Compliance Assurance Inspection may be removed from the Compliance Assurance List by Department personnel.

6.8.2.3 A vehicle that fails the Compliance Assurance Inspection may be subject to penalties as described in Section 14 of this regulation.

7.0 PERMIT REQUIREMENTS OF THE VEHICLE EMISSIONS I/M PROGRAM STATION

7.1 Permit Required.

7.1.1 No person shall in any way represent any place as an official I/M Program Station unless the station is operated under a valid permit issued by the Department.

7.1.2 The Department is authorized to issue or deny permits for I/M Program Stations.

7.1.3 No permit for any official I/M Program Station may be assigned, transferred, or used by any person other than the original owner identified on the permit application for that specific I/M Program Station.

7.1.4 The permit shall be posted in a conspicuous place within public view on the premises.

7.1.5 Application for an I/M Program Station permit shall be made to the Department upon a form provided by the Department. No permit shall be issued unless the Department finds that the facilities, tools, and equipment of the applicant comply with the requirements of this Regulation and that competent personnel, certified under the provisions of Section 8.0, are employed and will be available to make inspections, and the operation thereof will be properly conducted in accordance with this Regulation.

- 7.1.5.1 An I/M Program Station shall notify the Department and cease any emission testing if the station does not have a Certified Emissions Inspector employed.
- 7.1.5.2 An I/M Program Station shall notify the Department upon termination and/or resignation of any Certified Emissions Inspector employed by the station.
- 7.1.5.3 An I/M Program Station shall comply with all the terms stated in the permit application and all the requirements of this Regulation.
- ~~7.1.5.4 As a condition for permitting test and repair I/M Program Stations, the station will keep and maintain all necessary tools and resources needed to effectively repair vehicles that fail an emissions test;~~
- ~~7.1.5.5 As a condition for permitting test only I/M Program Stations, the station will notify the vehicle owner/operator that the facility is a test only facility and will not provide repairs, prior to any official emissions test;~~
- ~~7.1.5.6 An I/M Program Station shall have a building with a suitable exhaust extraction system; and~~
- 7.1.5.74 An I/M Program Station shall provide a dedicated internet connection for the Certified Testing Equipment. A wireless internet connection may be required by the Contractor.

7.2 Permit Duration and Renewal

7.2.1 The permit for I/M Program Stations shall be issued annually and shall expire on the last day of the month, one year from the month of issue. The permit shall be renewable sixty days prior to the date of expiration.

7.2.2 It is the responsibility of the owner/operator of the I/M Program Station to pursue the permit renewal through appropriate channels.

7.3 I/M Program Station to hold Department Harmless

7.3.1 In making application for a permit or for its renewal, such action shall constitute a declaration by the applicant that the Department shall be held harmless from liability incurred due to action or inaction of I/M Program Station's owners or their employees.

7.4 An I/M Program Station shall be kept in good repair and in a safe condition for inspection purposes free of obstructions and hazards.

8.0 TRAINING AND CERTIFICATION OF INSPECTORS

8.1 Certified Emissions Inspector Certification Required.

8.1.1 No person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.

8.1.2 Applications for a Certified Emissions Inspector Certification shall be made upon an application form prescribed by the Department. No certification shall be issued unless:

8.1.2.1 The applicant has shown adequate competence by successfully completing the written and practical all portions of the Certified Emissions Inspector Certification requirements as specified in this Regulation; and

8.1.2.2 The applicant has paid the required permit fees as set by the Board and referenced in Appendix A of this Regulation.

8.1.3 An applicant shall comply with all of the terms stated in the application and with all the requirements of this Regulation.

8.1.4 An applicant shall complete a Department approved training course and shall demonstrate knowledge and skill in the performance of emission testing and use of the Certified Testing Equipment test equipment. Such knowledge and skill shall be shown by passing at minimum:

8.1.4.1 Operation and purposes of emission control systems;

8.1.4.2 Inspection procedures as outlined in this Regulation and prompted by the Certified Testing Equipment test equipment;

8.1.4.3 Operation of the Certified Testing Equipment including the performance of gas calibration and leak check;

8.1.4.4 The provisions of Section 207(b) warranty provisions of the Federal Clean Air Act, and other federal warranties;

8.1.4.5 The provisions of this Regulation and other applicable Department policies and procedures; and

8.1.4.6 A performance qualification test including but not limited to the following:

(a) Demonstration of skill in proper use, care, and maintenance, calibration, and leak testing of the Certified Testing Equipment;

(b) Demonstration of ability to conduct the inspection; and

(c) Demonstration of ability to accurately enter data in the Certified Testing Equipment test equipment.

~~8.1.5 A signed hands-on performance check sheet shall be necessary for successful completion of the performance qualification test. The hands-on performance check sheet shall be signed by an instructor or other equally qualified person approved by the Department.~~

8.1.65 The Department shall issue a Certified Emissions Inspector Certificate to an applicant upon successful completion of the requirements of this section.

8.1.76 The Certified Emissions Inspector Certificates are and remain the property of the Department, only their use and the license they represent is tendered.

8.1.87 Certified Emissions Inspector Certifications shall not be transferred from one person to another person.

8.2 Recertification Requirements for Certified Emissions Inspectors

8.2.1 The Department may renew certifications for an existing Certified Emissions Inspector after a properly completed renewal form is submitted, reviewed, and approved, the recertification requirements have been completed, the fees are paid and the Certified Emissions Inspector has complied with this Regulation.

8.2.2 Certified Emissions Inspectors shall be required to recertify annually. Failure to recertify shall result in suspension or revocation of the Certification as described in this Regulation.

8.2.3 Certified Emissions Inspectors shall complete a Department approved refresher course every 2 years. Applicants for recertification shall complete a Department approved refresher course no more than sixty days prior to the date of expiration. ~~Applicants shall demonstrate knowledge and skill in the performance of emission testing and use of the test equipment.~~

8.3 Certification Expiration

8.3.1 The Certified Emissions Inspector Certification shall be issued annually and shall expire on the last day of the month one year from the month of issue. The certification shall be renewable sixty days prior to the date of expiration.

8.3.2 It is the responsibility of the Certified Emissions Inspector to pursue the renewal of the Certification.

8.4 Certified Emissions Inspector Certification Denial, Suspension and Revocation

8.4.1 Certified Emissions Inspector Certifications may be suspended or revoked by the Department for violations of this Regulation.

8.4.2 Suspension or revocation of Certified Emissions Inspector Certifications shall follow the provisions of Appendix C of this Regulation.

8.4.3 The Department may deny issuance of a Certified Emissions Inspector Certification to an individual that works as an emissions inspector in another county in Utah and is currently under suspension or revocation in that program.

9.0 INSPECTION PROCEDURE

9.1 The official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures, as referenced in this section and Appendix D, Test Procedures, are to be followed.

~~9.2 The Certified Emissions Inspector shall verify the vehicle license plate and vehicle identification numbers by comparing the information on the vehicle's registration with those on the vehicle and shall accurately record them on the inspection test equipment.~~

~~9.2.1 The Certified Emissions Inspector shall verify the owner's name and address and enter this information into the test equipment.~~

~~9.2.2 The Certified Emissions Inspector shall enter completely and accurately all the information required as part of the data entry procedure for the official vehicle emissions test on the approved test equipment.~~

9.32 A complete official test must be performed any time an inspection is requested. ~~The Certified Emissions Inspector shall not Do not perform any part of the inspection without initiating an official test on the Certified Testing Equipment test equipment.~~

9.43 The Certified Emissions Inspector shall perform the official vehicle emissions test using the proper testing procedure.;

9.43.1 All gasoline, and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a GVWR gross vehicle weight rating 8,500 lbs pounds or less, shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

~~9.4.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1969 to 1995 shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

~~9.4.3 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 to 2007 with a GVWR greater than 8,500 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

9.443.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR gross vehicle weight rating greater than 8,500 lbs pounds and less than 14,001 lbs pounds shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

~~9.4.5 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR greater than 14,000 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

9.463.3 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer with a GVWR gross vehicle weight rating less than 14,001 lbs pounds shall be tested as specified in Appendix D, Diesel Test Procedures, unless specifically exempted by this Regulation.

9.54 Retesting Procedures

9.54.1 If the vehicle fails the initial emissions inspection, the owner/operator shall have fifteen calendar days in which to have repairs or adjustments made and return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. ~~In order to be in compliance, the vehicle that failed the initial test shall meet the following conditions:~~

~~9.5.1.1 The vehicle is re-tested; and~~

~~9.5.1.2 The vehicle meets the requirements as specified in Appendix D.~~

~~9.5.2 If the vehicle is Rejected from the initial emissions inspection for failure to complete Readiness requirements, the owner/operator shall have fifteen calendar days in which to return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. In order to be in compliance, the vehicle that was Rejected from the initial test shall meet the following conditions:~~

~~9.5.2.1 The vehicle is re-tested; and~~

~~9.5.2.2 The vehicle meets the requirements as specified in Appendix D.~~

~~9.4.3 If the vehicle owner/operator does not return to the I/M Program Station that performed the initial inspection within fifteen calendar days the I/M Program Station is under no obligation to offer a free re-inspection.~~

9.65 Certificate of Waivers

~~9.6.1 A Certificate of Waiver may be issued for 1969 to 1995 model year vehicles if all of the following requirements are met:~~

~~9.6.1.1 Air pollution control devices identified in the emission decal are in place and operable on the vehicle. If the decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. The gas tank cap shall be in place. If the devices have been removed or rendered inoperable, they shall be replaced or repaired before a Certificate of Waiver is granted;~~

~~9.6.1.2 The vehicle continues to exceed applicable outpoint standards after \$200.00 of acceptable emissions-related repairs have been performed. Proof of repair costs shall be provided for the vehicle to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions-related parts are specifically identified. If repairs are made by someone with ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00.~~

9.6.25.1 A ~~Certificate of Waiver~~ may be granted and a Certificate of Compliance issued for 1996 and newer model year vehicles if all of the following requirements are met:

~~9.6.2.15.1.1~~ Air pollution control devices identified in the VECI Label emission decal are in place and apparently operable on the vehicle. If the VECI Label decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. If the devices have been removed or rendered inoperable, they shall be replaced or repaired before a Certificate of Waiver is granted;

~~9.6.2.25.1.2~~ ~~The vehicle continues to exceed applicable cutpoint standards after \$200.00 of acceptable emissions-related repairs have been performed, if the vehicle is subject to a Two-Speed Idle Inspection. If the vehicle is subject to an OBD Inspection, the~~ The vehicle continues to fail the inspection after \$200.00 has been spent on acceptable emissions related repair costs for that specific vehicle, and if proof of repair costs for that specific vehicle have been provided to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made by someone at a repair station that employs individuals with current ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00;

~~9.6.2.35.1.3~~ The vehicle is not within the time and mileage requirements of the federal emissions warranties. Any vehicle that is within time and mileage requirements of the federal emissions warranties shall not be eligible for ~~an emissions repair a~~ Waiver, but shall be repaired to pass the testing requirements; and

~~9.6.2.45.1.4~~ A vehicle that is ~~Rejected~~ from the OBD Inspection may qualify for a Waiver if it meets requirements set forth in Appendix F, Waivers for "Not Ready" Vehicles.

9.6.35.2 As used in Sections 9.6.1, and 9.6.2.9.5.1, acceptable emissions related repairs:

~~9.6.3.1~~ ~~Refers to those expenditures and costs associated with the adjustment, maintenance, and repair of the motor vehicle~~

which are directly related to reduction of exhaust emissions necessary to comply with the applicable emissions standards, and procedures, and/or repairs to the evaporation vapor recovery system;

- ~~9.6.3.25.2.1~~ May include adjustments, maintenance, or repairs performed up to 60 days prior to the official emissions test, provided appropriate documentation is supplied to the Department;

Diagnostic work performed, including Diagnostic Trouble Codes if applicable, must be properly documented to justify any repairs performed;

- ~~9.6.3.25.2.2~~ Does not include the fee paid for the test;

- ~~9.6.3.45.2.3~~ Does not include costs associated with the repairs or replacements of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, replacement, or repair is due to disconnection of, tampering with, or abuse of the emissions control systems;

- ~~9.6.3.5~~ Does not include repairs performed to the vehicle's exhaust system to correct problems with excessive exhaust dilution;

- ~~9.6.3.65.2.4~~ Refers to repairs, maintenance, and diagnostic evaluations done in accordance with manufacturer's specifications, to the extent that the purpose is to reduce emissions;

- ~~9.6.3.75.2.5~~ Repairs performed on OBD compliant vehicles should be directly related to the diagnostic trouble codes identified by the vehicle and by further diagnostic tests on the vehicle;

- ~~9.6.3.85.2.6~~ Does not include parts replaced on OBD compliant vehicles that cannot be justified through diagnostic trouble codes or further diagnostic tests on the vehicle.

~~9.6.4~~ Information regarding all performed repairs shall be entered into the appropriate data base of the test equipment prior to the vehicle being retested.

~~9.6.55.3~~ Certificates of ~~A~~ Waiver shall only be issued by the Department, unless the Department determines other acceptable methods of issuing the waivers. A wWaiver shall only be issued after determining that the vehicle complies with the requirements of this Section for waiver issuance.

~~9.6.6~~ Prior to referring the owner/operator to the Department for determining waiver eligibility, the I/M Program Station and the Certified Emissions Inspector shall verify that the repair and eligibility requirements of this Section have been met.

~~9.6.75.4~~ A Certificate of Waiver shall only be issued once to any vehicle that qualifies, throughout the lifetime of the vehicle.

~~9.6.85.5~~ A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a ~~w~~Waiver.

~~9.6~~ The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA, the Board, and the Council to seek approval to incorporate the new technology as a testing method.

10.0 ENGINE SWITCHING

~~10.1~~ Engine switching shall be allowed only in accordance with EPA policy, as detailed in EPA's Engine Switching Fact Sheet, dated March 13, 1991, and EPA's Addendum to Mobile Source Enforcement Memorandum 1A, dated September 4, 1997.

~~10.2~~ Vehicles subject to an emissions inspection, as referenced in Section 6.0 of this Regulation, that do not meeting the requirements of Section 10.01 shall be deemed as tampered and are not eligible for a Certificate of Waiver, unless they are restored to the original engine and emission control configuration.

~~10.3~~ The Department shall adhere to the policies listed in Appendix G to ensure vehicles with switched engines are inspected appropriately.

11.0 SPECIFICATIONS FOR CERTIFIED TESTING EQUIPMENT AND CALIBRATION GASES

11.1 Approval of Certified Testing Equipment

11.1.1 Certified Testing Equipment shall meet the specifications as detailed in Appendix E.

11.1.2 It shall be illegal for any person to modify the hardware or software of approved emissions test equipment Certified Testing Equipment without written application and formal approval by the Department and/or Contractor.

11.1.3 It shall be illegal for any person to gain access to any Department or vendor Contractor controlled portions of an approved test equipment Certified Testing Equipment without approval by the Department and/or vendor Contractor.

~~11.2 Calibration Gases~~

11.2.1 General: The approved vendor shall, on request, supply at a reasonable cost to the I/M Program Station, calibration gases approved by the Department. The approved vendor shall have approved, full calibration gas containers installed and operational at the time of delivery. The Department shall establish necessary procedures for approving calibration gases.

11.2.2 Calibration Gas Blends: The calibration gases supplied to any I/M Program Station shall conform to the specifications of the Department as specified in Appendix E. All calibration gases shall meet all Federal requirements for the emissions warranty coverage. Only gas blends supplied by Department approved blenders shall be used to calibrate official Analyzers.

~~11.3 Warranty and Maintenance Requirements~~

11.3.1 It shall be the responsibility of the I/M Program Station to obtain warranty coverage for testing equipment supplied by the approved vendor. Coverage requirements will be determined by the Department.

11.3.2 The testing equipment shall be maintained in accordance with the manufacturer's recommended maintenance schedule and records of this maintenance service shall be maintained for examination by the Department.

~~11.4 Gas Calibration and Leak Check:~~

Gas calibrations and leak checks shall be performed in accordance with the schedule referenced in Appendix E.

12.0 QUALITY ASSURANCE

12.1 A quarterly inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. During the time of the inspection by the Department, the Department's representative

shall have exclusive access to the Certified Testing Equipment. Inspections may be performed utilizing technology integrated into the Certified Testing Equipment.

~~12.1.1 During the time of the inspection and audit by the Department, the Department representative shall have exclusive access to the test equipment.~~

~~12.1.2 Required tools and equipment as noted in Section 7.1.5, shall be kept at the I/M Program Station at all times and shall be available for inspection by the Department at any time the inspection station is open for business.~~

12.2 An annual covert inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. The Department will utilize registration data, inspections records, and other pertinent information to determine when an I/M Program Station will receive a covert inspection. A covert inspection is a tool the Department may utilize while investigating violations of this Regulation.

12.3 The Department may increase the frequency of inspections and audits for I/M Program Stations and/or Certified Emissions Inspectors if the Department receives information of a violation of this Regulation.

12.4 The Department shall regularly monitor I/M Program Stations and/or Certified Emissions Inspectors through inspection records and/or technology integrated into the Certified Testing Equipment.

~~13.0 CUTPOINT STANDARDS FOR MOTOR VEHICLES EXHAUST GASES~~

~~In order to obtain a valid emissions Certificate of Compliance, exhaust emissions from a motor vehicle subject to a biennial Two-Speed Idle Test shall not exceed the maximum concentrations for carbon monoxide (CO) and hydrocarbons (HC) as specified in Appendix B.~~

143.0 DISCIPLINARY PENALTIES AND RIGHT TO APPEAL

143.1 When the Department, or its representative(s), receives information of a violation of any regulation contained herein which may result in a permit denial, revocation, or suspension, the Department shall notify the affected entity, in writing, informing the entity of the violation and penalties to be enforced. The affected entity may request a hearing within ten calendar days of the Department giving notice of the potential permit denial, revocation, or suspension. Only a written request for a hearing shall be honored by the Department. No appeal may be made on a formal warning.

143.1.1 In considering the appropriate administrative action to be taken as indicated in Appendix C, the Director shall consider the following:

- 143.1.1.1 whether the violation was unintentional or careless;
- 143.1.1.2 the frequency of the violation or violations;
- 143.1.1.3 the ~~audit inspection~~ and covert ~~audit inspection~~ history of the I/M Program Station and the Certified Emissions Inspector;
- 143.1.1.4 whether the fault lies with the I/M Program Station or the Certified Emissions Inspector.

143.1.2 After consideration of the factors in Section 143.1.1 the Director may take appropriate administrative action as indicated in Appendix C against either the I/M Program Station, the Certified Emissions Inspector, or both.

143.2 Appeals Hearing Procedure:

143.2.1 An appeals hearing shall be held at the request of the affected entity in order to determine the accuracy of information obtained by the Department and whether there are mitigating factors which would justify a reduction of the imposed penalties.

143.2.2 The requesting party may bring to the hearing any witnesses and any evidence believed to be pertinent to the disciplinary action.

143.2.3 The appeal shall be heard by the Vehicle Inspection and Maintenance Appeal Board, hereafter I/M Board, consisting of at least three persons, who are not employees of Bear River Health Department, appointed by the Board. The I/M Board shall have the discretion to determine which witnesses shall be heard and what evidence is relevant.

143.2.4 Violations determined to be intentional or flagrant shall result in the maximum enforcement of the penalty schedule pursuant to Appendix C.

143.2.5 In considering whether to reduce a penalty indicated by Appendix C, the I/M Board and the Department shall consider the following:

- 143.2.5.1 whether the violation was unintentional or careless;
- 143.2.5.2 the frequency of the violation or violations;

143.2.5.3 ~~the audit inspection and covert audit inspection history of the I/M Program Station and the Certified Emissions Inspector;~~

143.2.5.4 whether the fault lies with the I/M Program Station, the Certified Emissions Inspector, or both.

143.3 Written notice of the final determination of the I/M Board, including the I/M Board's finding under Section 14.2.5, shall be made within ten calendar days after the conclusion of the appeals hearing.

154.0 PENALTY

154.1 Any person who is found guilty of violating any of the provisions of this Regulation, either by failing to do those acts required herein or by doing a prohibited act, shall be guilty of a class B misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended. If a person is found guilty of a subsequent similar violation within two years, he shall be guilty of a class A misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

154.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.

154.3 The Cache County Attorney's Office may initiate legal action, civil or criminal, requested by the Department to abate any condition that exists in violation of this Regulation.

154.4 In addition to other penalties imposed by a court of competent jurisdictions, any person(s) found guilty of violating any of this Regulation shall be liable for all expenses incurred by the Department.

154.5 A Penalty Schedule for permit warning, suspension, or revocation is adopted as Appendix C and may be amended by the Board as the Board deems necessary to accomplish the purposes of this Regulation.

14.6 The Department shall request that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle's registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.

165.0 SEVERABILITY

If any provision, clause, sentence, or paragraph of this Regulation or the application thereof to any person or circumstances shall be held to be invalid, such invalidity shall not affect the other provisions or applications of this Regulation. The valid part of any clause, sentence, or paragraph of this Regulation shall be given independence from the invalid provisions or application and to this end the provisions of this Regulation are hereby declared to be severable.

176.0 EFFECTIVE DATE

This Regulation shall become effective on ~~May 27, 2015~~ January 1, 2021 as adopted by the Bear River Board of Health.

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APPENDIXappendix A – FEE SCHEDULE

Fee Schedule

Permitting of an official I/M Program Station	\$250.00
Annual Renewal of I/M Program Station	\$50.00
Expired I/M Program Station Renewal	\$75.00
I/M Program Station Re-location	\$75.00
Permitting of a Certified Emissions Inspector	\$25.00
Renewal of Certified Emissions Inspector	\$15.00
Expired Certified Emissions Inspector Renewal	\$25.00
Official Station Sign	Cost
APC Fee for 12 month registration	\$3.00
APC Fee for 6 month registration	\$2.25
Emissions Inspection Fee – OBD Test	\$15.00
Emissions Inspection Fee – TSI and Tampering	\$20.00

APPENDIX B

BEAR RIVER HEALTH DEPARTMENT
EMISSION STANDARDS
CUTOPOINTS

MOTOR VEHICLE EMISSIONS INSPECTION/MAINTENANCE PROGRAM

The following schedule gives the maximum allowable concentrations for carbon monoxide (CO) and hydrocarbons (HC) for both cars and trucks as determined by an approved infrared gas analyzer using the prescribed procedures. The effective date for these cutpoints is January 1, 2014.

ALL PASSENGER VEHICLES

1969-1978 LIGHT DUTY TRUCKS 6,000 POUNDS GVWR OR LESS

1979 AND NEWER LIGHT DUTY TRUCKS 8,500 POUNDS GVWR OR LESS

MAXIMUM CONCENTRATION STANDARDS

<u>MODEL YEAR</u>	<u>PERCENT</u> <u>CARBON MONOXIDE</u>	<u>PARTS/MILLION</u> <u>HYDROCARBONS</u>
1969	6.0	800
1970-1974	5.0	700
1975-1976	4.0	600
1977-1979	3.0	500
1980	2.0	300
1981-1995	1.2	220
1996 and newer	N/A OBD-II	N/A OBD-II

HEAVY DUTY TRUCKS AND VANS

1969-1978 6,001 AND OVER GVWR
 1979-2007 OVER 8,500 GVWR
 2008 AND NEWER OVER 14,000 GVWR

MAXIMUM CONCENTRATION STANDARDS

1969	7.0	1500
1970-1978	5.0	1200
1979-1980	4.0	1000
1981-2007	3.5	800
2008 and newer	3.5	800

The minimum dilution factor must also be reached as part of the testing requirement. The dilution factor determination is contained in the analyzer specifications provided by the approved vendor.

NOTE: These should be considered as “cutpoints” for maximum allowable emissions levels. Vehicles must never be reset to these emission levels when readjustments are made, but rather shall be adjusted using manufacturer’s specifications. By using manufacturer’s specifications, the emissions levels should be well below the “cutpoints.”

APPENDIX B - RESERVED

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APPENDIX C – PENALTY SCHEDULE

Violation (resets after 2 years of no similar violations unless revoked)	1st Occurrence	2nd Occurrence	3rd Occurrence	4th Occurrence
Failure to inspect or substituting a vehicle other than the vehicle on the test record – Registering a failing vehicle (<i>intentional pass</i>)	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Passing a failing vehicle or recording pass for tampering on a tampered vehicle (<i>gross negligence</i>)	Tech: 30 day suspension and mandatory retraining	Tech: 60 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years	
	Station: 15 day suspension	Station: 30 day suspension	Station: 60 day suspension	Station: Revocation of permit for up to 5 years
Falsifying an inspection record or emissions certificate or Failing a passing vehicle (<i>intentional</i>)	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Non-certified person performing test – Using another inspector’s access (<i>gross negligence table</i>)	Tech: 60 day suspension	Tech: 180 day suspension	Tech: Revocation of permit for up to 5 years	
	Station: 60 day suspension	Station: 180 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Inaccurate or incomplete data entry (<i>incompetence</i>)	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years
Failure to follow proper test procedures – Other regulation violations (<i>incompetence</i>)	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years

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APPENDIX D – TEST PROCEDURES

OBDII Test Procedures for gasoline and non-diesel based Alternative Fuel powered vehicles

1. The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
2. The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.
3. The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.
4. When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the screen prompts until the test is complete.
5. For 1996-2000 model year vehicles two (2) supported readiness monitors are allowed to be “not ready”. For 2001 and newer vehicles one (1) supported readiness monitor is

allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.

- 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.
- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.
- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, and/or oxygen sensor;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The presence of an OBD VIN in a vehicle that does not support OBD VINs;
 - 9.7 The absence of an OBD VIN in a vehicle that supports OBD VINs; or
 - 9.8 A change in PID count since the last inspection.
- 10 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 11 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures

All diesel powered vehicles 2007 and newer, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.
- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.
- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the screen prompts until the test is complete.
- 5 Two supported readiness monitors are allowed to be "not ready". If the "not ready" status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.
 - 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to "ready" upon re-inspection.

- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.
- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, NMHC, and/or NOx/SCR;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The absence of an OBD VIN; or
 - 9.7 A change in PID count since the last inspection.
- 10 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 11 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 12 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

All diesel powered vehicles 1998-2006, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 3 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 4 If the OBDII System is identified on the VECI label, the procedure in Section 2 through 5 shall be followed.
 - 4.1 An inspection of the OBDII System shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

Compliance Assurance Inspection

- 1 A vehicle that is referred to the I/M Technical Center for a Compliance Assurance Inspection shall be subject to an official emissions inspection. A visual anti-tampering inspection shall also be included in every Compliance Assurance Inspection. The air pollution control devices listed in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the VECI label is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
 - 1.1 A vehicle that has missing or tampered air pollution control devices will fail the Compliance Assurance Inspection and will not be issued a Certificate of Compliance.
 - 1.2 A vehicle that has missing or tampered air pollution control devices and has already been issued a Certificate of Compliance will be required to replace or

repair the devices. Owners/operators of vehicles that do not comply will be subject to the penalties in this Regulation.

- 2 The Department will use data obtained by the Utah Division of Motor Vehicles and inspection data to determine if a vehicle should be subject to a Compliance Assurance Inspection.
- 3 The owner/operator of a vehicle subject to a Compliance Assurance Inspection will be notified in writing of the requirement to present the vehicle for inspection.

Referee Inspection

- 1 Vehicles may be referred to the I/M Technical Center for a Referee Inspection. During a Referee Inspection the Department may override the normal testing criteria and issue a Certificate of Compliance for the following reasons:
 - 1.1 The vehicle will not communicate with the Certified Testing Equipment but will communicate with other scan tools. The vehicle must meet all other testing requirements including readiness status and MIL status; or
 - 1.2 The vehicle has met the criteria to be issued a Waiver.
- 2 A Referee Inspection may also be performed when an owner/operator believes the emissions inspection performed at an I/M Program Station was not done correctly.

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OBDII Test Procedures

On-Board Diagnostics (OBD) is the monitoring and fault detection/notification process of the Powertrain Control Module (PCM) related to the vehicle's emission control system and powertrain operation on 1996 and newer model year vehicles. When an emissions control malfunction is detected, a dashboard light illuminates, displaying one of the following: "Check Engine," "Service Engine Soon," or the international engine symbol. If the OBD system detects a problem that may cause vehicle emission to exceed applicable federal standards, the Malfunction Indicator Light (MIL) is illuminated and the appropriate diagnostic trouble code (DTC) and engine operating conditions will be stored in PCM memory.

1.0—Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.

1.1—If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

1.2—If the DLC is inaccessible, the problem must be remedied before the test can continue.

2.0—Turn the ignition switch to the off position for at least 30 seconds.

~~3.0—Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. Enter your visual inspection result into the test equipment.~~

~~3.1—If the MIL does not illuminate, the vehicle fails the test and must be repaired.~~

~~4.0—Turn the ignition switch to the off position for at least 30 seconds.~~

~~5.0—Start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the test equipment screen prompts until the test is complete.~~

~~6.0—For 1996–2000 model year vehicles two (2) not ready flags are allowed for a passing test. For 2001 and newer vehicles one (1) not ready flag is allowed. If the not ready status exceeds these numbers the vehicle must be driven additional miles until readiness monitors are set “ready” or repairs have been made allowing readiness flags to set ready.~~

~~6.1—A vehicle that fails the initial inspection for a catalyst-related fault (i.e., P0420–P0439) must have the catalyst monitor set to “ready” upon re-inspection.~~

~~7.0 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.~~

~~8.0 Certain vehicles have been determined to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.~~

~~9.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

~~10.0 A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.~~

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Two-Speed Idle (TSI) Test Procedures

During a two-speed idle test, the Analyzer measures the tailpipe exhaust emissions of a vehicle while the vehicle idles at both high and low speed. The Analyzer tests vehicles for carbon dioxide in addition to hydrocarbons and carbon monoxide. The two-speed idle test comprises two phases: (1) high speed test (2200-2800 RPMs) for the first phase of the emissions test; then, (2) tested at idle (350-1100 RPMs).

1.0 The Certified Emissions Inspector shall not inspect or test any motor vehicle with a mechanical condition which may cause injury to inspection personnel or damage to the inspection station or test equipment or which may affect the validity of the test, until such condition is corrected. Such conditions include, but are not limited to: coolant, oil, or fuel leaks; low oil or low fluid levels; and high visible emissions.

2.0 Prepare the Analyzer for testing as specified by the manufacturer.

3.0 Each vehicle shall be checked to determine that it is at normal operating temperature by feeling the top radiator hose or by checking the temperature gauge. Each vehicle shall be at normal operating temperature before performing the emissions inspection.

~~4.0—The inspection shall be performed with the transmission in “park” or “neutral” and with all accessories off and the emergency brake applied.~~

~~5.0—The Analyzer probe shall be inserted into the exhaust pipe at least twelve inches or as recommended by the Analyzer manufacturer, whichever is greater.~~

~~6.0—If a baffle or screen prevents probe insertion of at least twelve inches, a suitable probe adapter or snug fitting, non-reactive hose which effectively lengthens the exhaust pipe shall be used.~~

~~7.0—For all vehicles equipped with a multiple exhaust system that does not originate from a common point, both sides shall be tested simultaneously with an approved adapter.~~

~~8.0—When inspecting a vehicle under windy conditions, the tailpipe shall be shielded from the wind with a suitable cover.~~

~~9.0—With the tachometer properly attached, the vehicle shall be tested by following the screen prompts, answering questions, and entering required data. Vehicles failing because of excessive exhaust dilution shall repair the dilution problem prior to continuing the emission test. The dilution standard shall be contained in the Analyzer specifications provided by the approved vendor.~~

~~10.0 The Certified Emissions Inspector shall verify the presence of a gas cap and enter the information into the Analyzer.~~

~~11.0 Certain vehicles cannot be tested in the high speed (2200-2800 RPM) mode. The test equipment software will maintain a list of these vehicles and perform a modified test.~~

~~12.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

~~13.0 A Certificate of Compliance shall be issued if the vehicle emissions levels are the same as or less than the applicable cutpoint standards as referenced in Appendix B, and the vehicle has a gas cap present.~~

~~14.0 Switchable Bi-Fuel vehicles shall be tested on both fuels. The software will require two separate tests for these vehicles.~~

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~~Diesel Powered Vehicles Test Procedures~~

~~1.0 All diesel powered vehicles 2007 and newer, less than 14,001 lbs GVWR, shall be tested in accordance with the following procedure:~~

~~1.1 Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.~~

~~1.1.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.~~

~~1.1.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.~~

~~1.2 Turn the ignition switch to the off position for at least 30 seconds.~~

~~1.3 Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. Enter your visual inspection result into the test equipment.~~

~~1.3.1 If the MIL does not illuminate, the vehicle fails the test and must be repaired.~~

~~1.4 Turn the ignition switch to the off position for at least 30 seconds.~~

~~1.5 Start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the test equipment screen prompts until the test is complete.~~

~~1.6 If the vehicle has 1 or more monitors “not ready”, follow the attached flowchart to determine whether the readiness check will be marked as pass or fail.~~

~~1.6.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420–P0439) must have the catalyst monitor set to “ready” upon re-inspection.~~

~~1.7 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.~~

~~1.8 Certain vehicles have been determined by the EPA to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.~~

~~1.9 A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.~~

~~2.0 All diesel powered vehicles 1998-2006, less than 14,001 lbs GVWR, shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the emission decal shall be in place and apparently operable on the vehicle. If the decal is missing the vehicle owner/operator shall have the decal replaced.~~

~~2.1 The devices listed on the decal must be present and apparently operable to pass the emission inspection.~~

~~2.2 If the OBD-II system is identified in the emission decal, the procedure in Section 1.1 through 1.5 shall be followed.~~

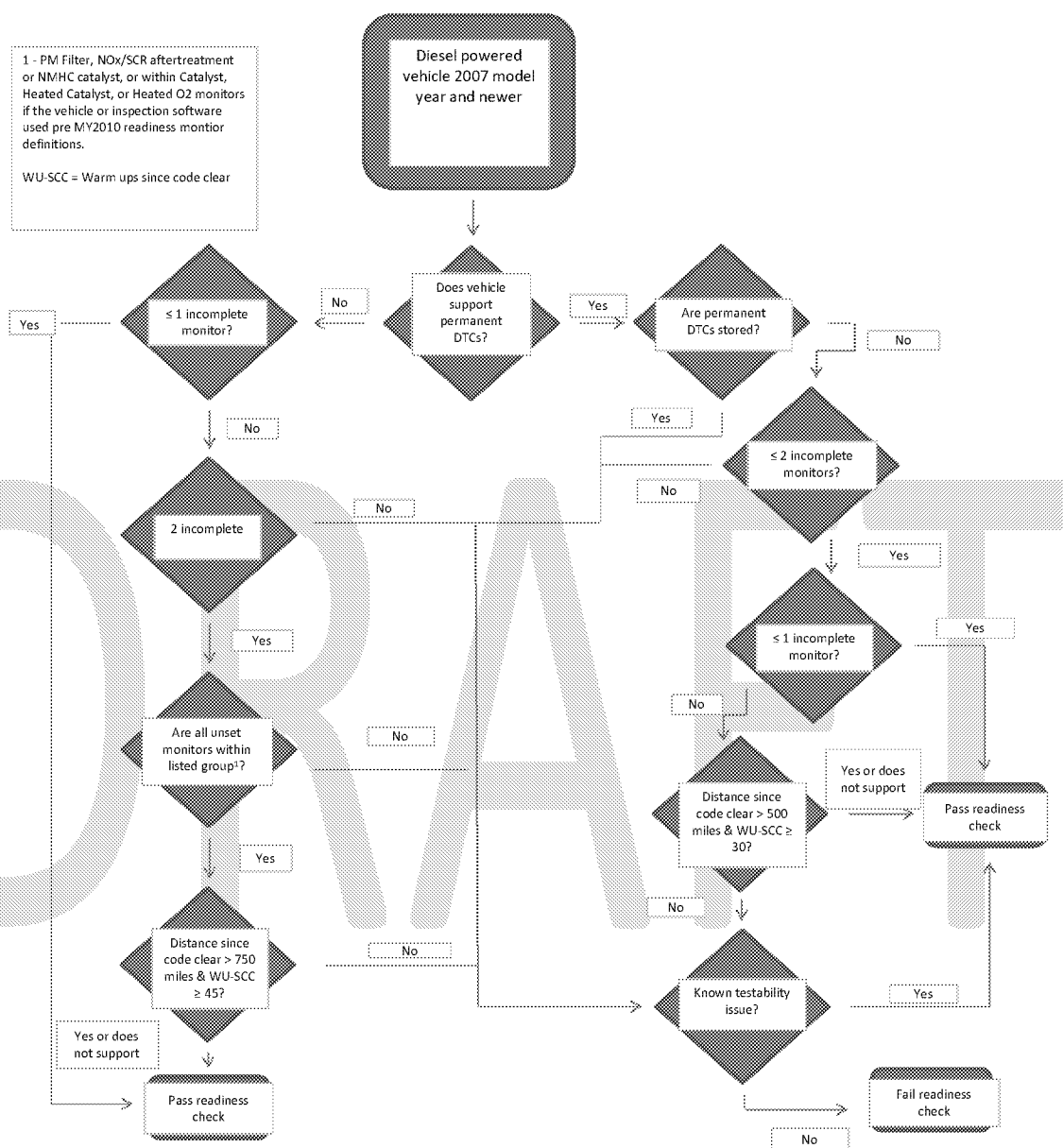
~~2.3 If the decal is missing, the I/M Program Station and/or the Certified Emissions Inspector may use reference material as approved by the Department to identify the air pollution control devices required for the vehicle.~~

~~2.4 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

~~2.5—A Certificate of Compliance shall be issued if the emissions control devices are in place and apparently operable. An inspection of the OBD-II system as referenced in Section 2.2 shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.~~

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Diesel Readiness Check Flowchart



APPENDIX E -- Technical Specifications and Calibration Gas CERTIFIED TESTING EQUIPMENT STANDARDS

1 General

This appendix contains specifications for Contractors to design Certified Testing Equipment to be used in the Cache County I/M Program.

1.1 Design Goals

Certified Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment. The software must be designed for maximum operational simplicity. The software must prevent users from clearing Diagnostic Trouble Codes (DTC), changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Certified Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data.

These technical specifications contain the minimum requirements for Certified Testing Equipment used to perform official emissions inspections in Cache County, UT.

1.2 Manuals

All Certified Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions.

maintenance instructions, and initial startup instructions. The manual may be provided in electronic format and shall be accessible from the Certified Testing Equipment.

1.3 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Certified Testing Equipment.

The Contractor shall provide a minimum of one-year warranty coverage on each unit of Certified Testing Equipment sold or leased. The one-year warranty coverage shall begin on the date of purchase and shall be included in the unit pricing for the Certified Testing Equipment. An extended warranty shall be made available to the I/M Program Stations that purchase or lease Certified Testing Equipment.

1.4 Contractor Provided Services

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Certified Testing Equipment:

- Delivery, set-up, and verification of proper functionality of the Certified Testing Equipment; and
- Training on the use and maintenance of the Certified Testing Equipment.

The Contractor shall provide the following services to the I/M Program Station during the initial one-year warranty coverage period and thereafter to any I/M Program Station that purchases an extended warranty:

- Full system support and repair as detailed in the warranty coverage agreement; and
- Appropriate service response, either on-site or remote, by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, and national/state holidays (New Year's Day, Human Rights Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), of a request from the I/M Program Station. All system repairs, component replacements, and/or Certified Testing Equipment adjustments must be accomplished within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Certified Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.5 Tamper Resistance

The Certified Testing Equipment operators, Department personnel, and Contractor authorized service technicians shall be prevented from changing any inspection results, programs, or data contained on the Certified Testing Equipment. The Contractor shall use appropriate software and/or hardware provisions to protect files and programs.

2 – Hardware/Software Requirements

2.1 Accessing the OBD System

The Certified Testing Equipment must include hardware and software necessary to access the on-board computer systems of vehicles subject to OBD inspections. This includes the following:

- 1996 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 8,500 pounds or less
- 2008 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less
- 2007 and newer diesel and diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less

The Certified Testing Equipment shall be compliant with the recommended practices regarding OBD inspections contained in J1962, J1978, and J1979 as published by the Society of Automotive Engineers (SAE). The Certified Testing Equipment must be able to connect to the vehicle's data link connector (DLC) and access, at a minimum, the following OBD data:

- Service modes \$01, \$03, \$06, \$07, \$09, \$0A

The Certified Testing Equipment must be capable of communicating with all OBD vehicles that use, at a minimum, the following communications protocols:

- International Organization for Standardization (ISO) 9141
- Variable Pulse Width (VPW)
- Pulse Width Modulation (PWM)
- Keyword Protocol 2000 (KWP)
- Controller Area Network (CAN)

2.2 Barcode Scanner

The Certified Testing Equipment must include a bar code scanner capable of reading both 1D and 2D barcodes. The bar code scanner must be able to read the barcode through a windshield. The barcode scanner must be able to withstand multiple 6.5 foot (2 meter) drops to concrete and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

The bar code scanner may be a stand alone device or may be integrated into the Certified Testing Equipment.

2.3 Camera

Certified Testing Equipment shall be equipped with video capturing equipment. The video capturing equipment must capture video from each official emissions inspection.

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1.0 GENERAL

This appendix contains specifications for Emission Inspection System Contractors (hereafter, Contractors) to design Testing Equipment to be used in the Cache County Vehicle Emissions Inspection and Maintenance Program (hereafter, I/M Program). Testing Equipment to be used in the I/M Program must be capable of performing consistent Two-Speed Idle (TSI), and On-Board Diagnostics (OBD) emissions inspections.

1.1 Design Goals

Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment and have a useful life of at least five years. The software must be designed for maximum operational simplicity and be capable of providing emissions readings or codes that can be used for vehicle diagnostics. A manual, non-test mode should be available to perform vehicle diagnostics. The software must prevent users from clearing Diagnostic Trouble Codes, changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data, record unauthorized entry, also known as tampering, and prevent subsequent inspections when tampering is detected.

These technical specifications contain the minimum requirements for Testing Equipment used to perform emissions inspections in the I/M Program. Contractors may include additional items with approval from the Bear River Health Department (hereafter, the Department).

1.1.1 Identification Data

A nameplate including the following information must be permanently affixed to the housing of the Testing Equipment:

- Name and address of manufacturer;
- Model description;
- Serial number; and
- Date of assembly.

In addition, the Contractor shall affix a label to the housing of the Testing Equipment that contains a toll-free telephone number for customer service. This telephone number must also be displayed on error messages that recommend the need for service by the manufacturer.

The Testing Equipment must also electronically display:

- Nameplate data;
- Testing Equipment number; and

- ~~Propane Equivalency Factor (PEF).~~

1.2 Manuals

All Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial startup instructions. The manual may be provided in an electronic format and should be accessible from the Testing Equipment.

1.3 Certification Requirements

The Contractor shall submit a letter to the Department stating that the Testing Equipment model sold or leased by the Contractor or its authorized representatives satisfies all design and performance criteria described in these specifications. Unless otherwise specified, a copy of the software documentation listed below must be submitted to the Department as part of the certification application. The documentation must include, at a minimum, the following:

- ~~Complete program listing(s);~~
- ~~Functional specifications;~~
- ~~Functional flowcharts of the software;~~
- ~~Example inputs and outputs from all processes;~~
- ~~Detailed interface information on system components including the identification of protocol and output specifications; and~~
- ~~File layouts.~~

To ensure proper maintenance of all Testing Equipment, a full description of the Contractor's service procedures and policies, sample contracts, warranties, and extended service agreements must be provided as part of the certification application. The Contractor shall provide a training plan to the Department that will be used to conduct certification training of potential inspectors on the use of the Testing Equipment. The Contractor shall supply to the Department and maintain at least one piece of Testing Equipment.

1.3.1 Escrow of Software

The Contractor must submit a letter of corporate authorization agreeing to place software source codes and other pertinent technical information in an escrow placement approved by the Department. The Contractor shall contract with the approved escrow company and provide the Department with a copy of the contract including the Department as a beneficiary. Certification of the Testing Equipment will not be valid until this condition has been met.

~~The Contractor must place in escrow the most recent version of the Testing Equipment software, including but not limited to, the actual software code and related materials used to meet this specification. The software will be turned over to the Department only if the Contractor defaults or cannot ensure continued performance of the contract.~~

~~In the event that the software is transferred, the Department shall protect it from public dissemination and commercial usage to the extent required by law. The software may be used, maintained, and updated by the Department, or its assignee, to support the I/M Program. At a minimum, the Department shall:~~

- ~~• Limit source code access to parties necessary to maintain and update the analyzers;~~
- ~~• Require all parties to sign a non-disclosure agreement before obtaining access to the code; and~~
- ~~• Grant no license permitting an entity to use any part of the codes for any commercial purpose other than to update and operate the analyzers.~~

~~The Department is not interested in the disclosure of proprietary information or the detailed inner workings of the software. However, it is essential that the software, schematics, and drawings be available in case the Contractor defaults.~~

~~As a prerequisite to certification, the Contractor shall furnish a performance bond to the Department. This bond must be in a form approved by the Department, executed as a surety by a bonding company authorized to do business in the State of Utah, and signed by a licensed resident agent. The performance bond must be for \$250,000 and must remain valid for the entire time period that the Contractor participates in the I/M Program. The performance bond must cover all Testing Equipment that is certified to conduct emissions inspections in the I/M Program.~~

~~The performance bond may be used by the Department at any time if the Contractor is in default of the requirements of these specifications, including but not limited, to the following "Events of Default":~~

- ~~A. The Contractor fails to remedy a breach of covenant, representation, or warranty required by these specifications within thirty (30) days after written notice of such breach has been given to the Contractor by the Department;~~
- ~~B. The Contractor makes a general assignment for the benefit of creditors, admits in writing its inability to pay debts as they mature, institutes proceedings to be adjudicated upon voluntary bankruptcy, consents to the filing of a bankruptcy proceeding against it, files a petition or answer or consent seeking reorganization, readjustment, arrangement, composition, or similar relief under federal bankruptcy or any other similar applicable law(s), consents to the filing of any such petition, consents to the appointment of a receiver,~~

liquidator, trustee, or assignee in bankruptcy or insolvency of the manufacturer or a substantial part of its property, or takes action to further any of these purposes; or

C. ~~A court of competent jurisdiction enters a decree or order adjudging the Contractor as bankrupt or insolvent, or approving a properly filed petition seeking reorganization, readjustment, arrangement, composition, or similar relief for the Contractor under the federal bankruptcy or any other similar applicable law(s), and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or a decree or order of a court of competent jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of the manufacturer or of a substantial part of its property, or for the liquidation of its affairs, is entered, and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or any substantial part of the property of the Contractor is sequestered or attached and is not returned to the Contractor or released from such attachment within sixty (60) days thereafter.~~

~~To require performance by the surety under the performance bond, the Department shall give written notice of the event of default to the Contractor, specifying the date upon which the surety performance must begin.~~

~~The Director or his designee shall release the performance bond once it is determined that the Contractor has satisfactorily completed its obligations in accordance with the terms of these specifications, or at an earlier date, if it is determined by the Director to be in the best interest of the Department.~~

1.4 ~~Warranty Coverage and Extended Service Agreements~~

~~A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Testing Equipment.~~

~~The original manufacturer's warranty must be a minimum of one year from the date of purchase. An extended warranty service agreement must be available to the Testing Equipment owner upon the expiration of the manufacturer's original warranty period. Cost disclosures of consumable inventory items and extended warranty service agreements with detailed descriptions of coverage must be available to all Testing Equipment owners.~~

~~The cost of extended warranty service agreements must be identified in the Contractor's response to the RFP.~~

~~1.5 Contractor Provided Services~~

~~A Contractor authorized repair technician is a Testing Equipment service technician that is authorized by the Contractor to perform service on their fleet of Testing Equipment. Only Contractor authorized repair technicians may access the secure areas on the Testing Equipment.~~

~~The Contractor authorized repair technician shall perform a gas calibration prior to returning an Analyzer to service whenever a component of the emissions measurement system is repaired or replaced. Similarly, the Contractor authorized repair technician shall perform a leak check each time the Analyzer's sample line is broken and repaired. Contractor authorized repair technicians shall have software driven menu options or other acceptable method that records the transfer of inspection station, inspector information, and other data from one unit of Testing Equipment to another without manual inputs or the transfer of previous data.~~

~~The Department may require the Contractor to conduct on-site or laboratory testing of the Testing Equipment in order to document continued compliance. The Contractor shall supply the I/M Program Station a temporary replacement unit of Testing Equipment that meets the I/M Program requirements if a unit of Testing Equipment is removed from the I/M Program Station for repair or testing. The Contractor shall be responsible for any costs incurred under this requirement.~~

~~The Contractor shall correct software features that do not meet these specifications to the satisfaction of the Department. The enhancement of operational software must be specified by the Department and be designed to update through the internet. Unless authorized by the Department, software enhancements must be available for beta testing within 120 days of commencement of a software update contract and receipt of an updated Testing Equipment specification. The Contractor shall not modify any existing Testing Equipment software without obtaining approval from the Department.~~

~~The Contractor shall be responsible for training Department officials responsible for oversight of the I/M Program, including but not be limited to, the instruction on all operational, maintenance, and quality control features of the Testing Equipment sampling system, full access to and use of inspection, audit, and calibration menus, and optional programs offered to inspectors. This training must be conducted at the Contractor's expense as a condition of certification, and upon written request by the Department.~~

~~The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Testing Equipment:~~

- ~~• Delivery, installation, calibration, and verification of the proper operating condition of the Testing Equipment;~~
- ~~• Two extra sample filters with each TSI Analyzer, and an additional printer cartridge or a certificate redeemable for a printer cartridge for all Testing Equipment;~~

- ~~A minimum of two hours operation and maintenance training to the owners and operators for each unit of Testing Equipment purchased or leased.~~

~~The Contractor shall provide the following services to the I/M Program Station as part of the manufacturer's original warranty and thereafter as a portion of the extended warranty service agreement.~~

- ~~Full systems support and repair, including temporary provision of units of equal quality and specification;~~
- ~~Quarterly examination, calibration, and routine maintenance of Analyzer and sampling systems on the TSI Analyzers. Annual examination must be required on the OBD portion of the Testing Equipment.~~
- ~~On-site service response by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, national/state holidays (New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), and other days the purchaser's business might be closed, of a request from the I/M Program Station. The names, toll-free telephone number(s), and service facility addresses of the Contractor's representatives responsible for Equipment service must be provided to the I/M Program Station. All system repairs, component replacements, and/or Testing Equipment adjustments, including reset of quality control lockout systems, must be accomplished on-site within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.~~

~~1.6 Electronic Transmission Security~~

~~The Testing Equipment shall utilize a standard protocol encryption method for communications with the host incorporating error detection and not incorporating error correction. The Testing Equipment shall utilize bitsum checking for all messages.~~

~~1.7 Tamper Resistance~~

~~The controlled access design must be the responsibility of the Contractor, but all security measures must be submitted to the Department for approval. The Testing Equipment operators, Department personnel, and field representatives authorized by the Contractor shall be prevented from creating or changing any inspection results, programs, or data contained on the Testing Equipment. The Contractor shall use appropriate software and hardware provisions to protect I/M files and programs. The file and program protection may consist of mechanical systems in combination with electronic and software systems. The protection features must prevent access to the secured portions of the hard disk containing I/M programs and inspection data. The control key or its functional~~

~~equivalent, which gives access to the operating system (OS), must not be activated except through the use of a password on the audit menu. The password must be chosen by the Department at the time of certification testing. Other security or protection alternatives may be proposed by the Contractor for approval by the Department.~~

~~The Contractor shall, at a minimum, develop tamper resistant features to prevent unauthorized access through the Testing Equipment cabinet. Micro switches, keyed and software controlled locks, and software algorithms requiring the use of an access code must all be used where appropriate. Any unauthorized access to the secured areas of the Testing Equipment must be detected, even when the power is off. A software lockout algorithm must be activated should tampering occur, which would abort any existing inspection sequence and prevent further inspections until the lockout is cleared by a field representative authorized by the Department. The Contractor shall develop a system to allow Contractor authorized repair technicians to clear tamper lockouts only during authorized service calls. The lockout system must be designed so that it can be activated from the audit menu by Department personnel. The Contractor may use keyed locks on the cabinet doors to secure the disk drives as long as the locks are built in and can be changed by authorized personnel should a security problem be identified. A software controlled solenoid lock may also be used on the secured drive door of the Testing Equipment. The solenoid lock may be used instead of or in addition to any key or combination lock that may be provided. The Testing Equipment software must control the solenoid lock and unlatch the doors in response to authorized requests from the audit menu while maintaining the appropriate levels of security.~~

~~A tamper file must be created that includes the date, time, type, and location of the tamper lockout, date and time the lockout was cleared, and who cleared the lockout. The tamper lockout type and location must be accessible only through the lockout function of the Testing Equipment's audit menu.~~

~~Access to the compact disc drive (CD), if applicable, must be available to I/M Program Station personnel at all times. However, access to the BIOS, I/M related programs, and data must be secured separate from the CD and additional drives. The Contractor shall provide a security method approved by the Department for the CD drive(s) to prevent unauthorized reads, writes, and executable. However, the Contractor may offer Testing Equipment with additional disk drives that can run optional software application programs.~~

~~The Testing Equipment must prevent Contractor authorized repair technicians from performing the following, except in a manner approved by the Department:~~

- ~~• Clearing a state lockout;~~
- ~~• Clearing a lockout for a failed three day gas calibration or leak check;~~
- ~~• Adding, deleting, or modifying test data;~~
- ~~• Adding, deleting, or modifying I/M Program Station information or an Certified Emissions Inspector's license number; and~~

- ~~Altering the calibration gas bottle values.~~

1.8 Automated Inspection Process Software and Displays

The inspection process, data collection, and quality control features of the Testing Equipment must be automated as much as possible. The software must automatically select the emission standards for the vehicle from an internal reference table. Vehicle identification information must be derived from a database accessed over a real-time data system to the Testing Equipment. Access to the Vehicle Identification Database (VID) shall be accomplished by entry of the vehicle identification number (VIN) in its entirety. Provisions must be made for manual entry of data for vehicles not in the reference files of the Testing Equipment. The Contractor in consultation with the Department shall customize how the emission testing results are displayed on the Testing Equipment and on the approved paperwork provided to the owner of the vehicle.

2.0 ~~HARDWARE REQUIREMENTS~~

2.1 ~~Overview~~

The hardware requirements for the Analyzer must meet or exceed specifications as published by the California Bureau of Automotive Repair (BAR) and contained in the "BAR 97 EMISSIONS INSPECTION SYSTEM SPECIFICATIONS" (BAR 97), dated May 1996, except where reference is made to ASM testing and NOx gas measurement requirements. The Analyzer may include all amendments made to the BAR 97 hardware specifications to present date. Each Analyzer shall be equipped with Bar Code Scanner, Engine Revolutions per Minute Detection System and Real Time Inspection Testing Monitoring System.

2.2 ~~Accessing the OBD System~~

The Testing Equipment must include hardware and software necessary to access the on-board computer systems on all model year 1996 and newer gasoline and natural gas powered vehicles. The Testing Equipment must also be able to access the on-board computer system on all model years 2007 and newer diesel-powered vehicles. The equipment design and operation of the Testing Equipment must meet the federal requirements contained in Title 40 of the Code of Federal Regulations (CFR), Chapters 85.2207-2231 and the recommended practices regarding OBD inspections contained in the J1962, J1978 and J1979 published by the Society of Automotive Engineers (SAE). The Testing Equipment must be able to connect to the vehicle's OBD connector and access, at a minimum, the following OBD data:

- ~~Service modes: \$01, \$03, \$06, \$07, \$09, \$0A~~

At a minimum, the Testing Equipment must also be capable of communicating with all OBD vehicles that use the following communications protocols:

- ~~International Organization for Standardization (ISO) 9141;~~

- ~~Variable pulse width (VPW) as defined in the SAE's J1850;~~
- ~~Pulse width modulation (PWM) as defined in the SAE's J1850;~~
- ~~Keyword protocol 2000 (KWP); and~~
- ~~Controller area network (CAN) as defined in the ISO 15765-4.3:2001.~~

The OBD interrogation process must be fully integrated into the Testing Equipment, automated, and require no inspector intervention to collect and record the OBD data retrieved via the OBD connector link. No separate interface may be used.

2.3 ~~OBD Inspection Equipment~~

The OBD inspection Equipment apply only to the OBD communication components, which must meet all federal requirements contained in 40 CFR §§85.2207–85.2231 and recommended practices contained in the J1962, J1978, and J1979 published by the SAE. The Equipment must meet criteria contained in the EPA's guidance document, "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program" (EPA, 2001) or EPA's applicable update to this document.

2.4 ~~Bar Code Scanner~~

The bar code scanner must be able to read a one-dimensional (1-D) and a two-dimensional (2-D) bar code through a windshield and use visible laser diode technology or an equivalent approved by the Department. The bar code scanner must not be able to read Universal Product Code (UPC) 1-D bar codes. The bar code scanner must be able to withstand multiple drops to concrete covering a distance of at least 4 feet and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

2.5 ~~Engine Revolutions per Minute Detection~~

Testing Equipment must be equipped with a tachometer, or equivalent software and hardware necessary to detect engine RPM from the original equipment manufacturer (OEM) ignition technologies in use at the time of certification. Possible updates may be required to enable future ignition systems to be monitored for engine RPM. A software "HELP" screen must be available to help the Certified Emissions Inspector locate an RPM signal. The cable type connection must be at least 25 feet long (measured from the front of the Testing Equipment).

Based on the vehicle identification information available to the Certified Emissions Inspector, the Testing Equipment must display messages indicating when the vehicle under inspection requires a specific type or method of the tachometer pick-up connection. A digital display tachometer must be displayed to measure engine speed. For TSI Analyzers, RPM readings must be recorded on a second-by-second basis for the 10 second or 5-second period that is used to determine the pass or fail status of the TSI emissions inspection, respectively. The tachometer operation must use one of the following means:

- ~~Radio frequency type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles using distributorless ignition systems (DIS);~~
- ~~Cable type connection capable of detecting engine RPM of current OEM ignition technology;~~
- ~~Battery/accessory power connection; or~~
- ~~Cable type connection capable of detecting engine RPM via the OBD port.~~

~~During the official inspection process the Testing Equipment must prompt the Certified Emissions Inspector to shut the engine off while connecting the cable type RPM connection. The RPM bypass function must be made available when the live engine RPM is displayed for the first time. If the RPM cannot be obtained, the Certified Emissions Inspector shall be allowed to bypass the RPM. The Certified Emissions Inspector must simultaneously strike at least two keys to activate the RPM bypass. The bypass function must no longer be available once the emission inspection has begun. The Certified Emissions Inspector may use the previously listed methods for 1996 and newer model year vehicles if the OBD port is unable to detect engine RPM. Tachometer performance must be no less than a 0.5 second RPM response time with an accuracy of ± 3 percent of actual RPM.~~

~~2.6 Real Time Inspection Testing Monitoring System~~

~~All approved Testing Equipment conducting official emission testing shall be equipped with video capturing equipment. An I/M Program Station will be in violation if the video capturing equipment is not properly maintained or installed and capturing images of each inspection. If video equipment is not fully operational, the I/M Program Station must contact the Contractor immediately for repair or replacement.~~

~~2.7 Inspection Restrictions Based on Current Calibrations~~

~~The Analyzer must:~~

- ~~prevent TSI emissions inspections if the leak check has not passed in the last 24 hours;~~
- ~~prevent TSI emissions inspections if the gas calibration has not passed in the last 72 hours;~~

~~The Testing Equipment must display appropriate error messages that indicate when a leak check or other calibration is needed to allow TSI inspections to be performed.~~

~~2.8 Running Changes and Other Hardware Modifications~~

~~Changes to design characteristics, component specifications, or any other modifications to the Testing Equipment hardware must be approved by the Department. The Contractor is responsible for confirming that such changes will have no detrimental effect on~~

performance of the Testing Equipment. The Department may require testing at approved beta test sites prior to the release of the modifications.

All proposed hardware modifications must be thoroughly tested by a third party before being submitted to the Department, and be accompanied by a cover letter containing the following information:

- Description of all of the proposed modifications to be performed, a parts list, and the installation instructions for the Contractor authorized repair technician;
- Test data and an engineering evaluation regarding the effects of the proposed modification(s) on the performance and reliability of the Testing Equipment for any modifications to the bench or sample system;
- Timeline showing timeframe in which the modifications are expected to occur and the number of existing units of Testing Equipment that will be updated;
- Description of any special procedures that are needed to perform the hardware modifications; and
- Documentation for any software update that would be required for the proposed hardware modifications.

2.9 Exhaust Gas Analysis Equipment Specifications

This section defines the requirements for the components needed to determine the concentrations of the exhaust gases during the TSI inspections.

2.9.1 Measured Gases

The Analyzer must measure hydrocarbons (HC) as hexane in parts per million (ppm), carbon monoxide (CO), carbon dioxide (CO₂), and oxygen (O₂) in percent. The Analyzer must have a digital display for vehicle engine speed and exhaust concentrations of HC, CO, CO₂, and O₂ and must be capable of measuring exhaust concentrations of HC, CO, CO₂, and O₂ at a minimum sample rate of twice per second.

2.9.2 Warm-up Conditions

The Analyzer must reach stability within 30 minutes from startup at 35 degrees Fahrenheit (°F). The Analyzer must be considered warmed up when the internal verifications are complete and the zero and span readings for HC, CO, CO₂, and O₂ have stabilized within the allowable accuracy values for five minutes without adjustment. If stabilization has not been reached within an allotted time frame, then the Analyzer must prevent TSI inspection sequences and display a message instructing the Certified Emissions Inspector to call for service. Functional operation of the gas sampling system must remain disabled through an internal lockout until the instrument meets stability and warm-up requirements.

2.9.3 Sampling System Components

A) General:

The sampling system must extract exhaust gas from a subject vehicle, remove particulate matter and aerosols from the sampled gas, drain the condensed water from the sample if necessary, and deliver the resultant gas sample to the Analyzer's sensors for analysis. The sampling system must, at a minimum, consist of a tailpipe probe, flexible sample line, continuously draining water removal system, particulate trap, sample pump, and flow control components. Provisions must be made for the introduction of zero air and calibration gases. Materials that are in contact with the gases sampled must not contaminate or change the composition of the gases to be analyzed, including gases from vehicles not fueled by gasoline. The system must be designed to be corrosion-resistant and to withstand vehicle exhaust.

B) Sample Probe and Hose Criteria:

Sample hose must be 25 feet in length with a tolerance of ± 0.5 feet when measured from the front of the Analyzer cabinet. The hose must be composed of non-kinking material that will not be affected by or react to the exhaust gases. Sample hose and probe provided with each Analyzer must withstand exhaust gas temperatures at the probe tip of up to 1,100°F for 10 minutes. Use of dissimilar metals with thermal expansion factors of more than 5 percent must not be used in either the construction of probes or connectors.

A positive means of retention must be incorporated to prevent the probe from slipping out of the tailpipe when in use.

A thermally insulated securely attached hand grip must be provided on the probe to ensure easy probe insertion using one hand.

The probe must be designed so that the tip extends 16 inches into the tailpipe and at least 10 inches into the vehicle's exhaust.

The probe tip must be shielded to avoid inadvertent debris collection and sealed to prevent any sample dilution when it is inserted into the tailpipe. Use of a tailpipe extension is permitted as long as the extension does not change the exhaust back pressure by more than ± 1 inch of water pressure.

A straight probe tip must be provided that is bent less than 15 degrees, made of stainless steel solid-wall tubing with a 3/16 inch outside diameter, and designed so the connector between the removable probe tip and the rigid portion of tubing is up inside the tailpipe at least three inches to reduce the effects of any leak that might occur.

~~A probe tip cap suitable for performing a leak check must be provided if the vacuum decay method for performing a leak check is used. Otherwise, all hoses and connectors that are necessary to perform a leak check must be provided.~~

~~The sample system must include equipment necessary to inspect vehicles equipped with dual exhaust pipes. The flow in each leg of the dual exhaust probe sample system must be equal.~~

~~C) Particulate Filter and Water Trap:~~

- ~~• The particulate filter must be capable of trapping 97 percent of all particulates and aerosols five microns or larger;~~
- ~~• The filter must not absorb or adsorb HC;~~
- ~~• The filter housing must be transparent to allow the operator to observe the filter's condition without removing the housing. The filter must be removable and reliably seal after replacement;~~
- ~~• The water trap must be sized to remove exhaust sample water from vehicles fueled with, or a combination of gasoline, propane, compressed natural gas (CNG), oxygenated fuels, and alternative fuels. The filter bowl, filter, and housing must not react to these fuels or the vehicle's exhaust gases. The condensed water must be continuously and sufficiently drained from the water trap's bowl to prevent condensation in the sample system or in the optical bench's sample cell; and~~
- ~~• Incorporate a back-purge system;~~

~~D) Low Flow Indicator:~~

~~The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that detects sample flow degradation. The Analyzer must display a low flow condition message when flow rate causes the measurement error for any gas to exceed 3 percent of the gas value used for calibration or audit or causes the analyzer response time to exceed 13 seconds to 90 percent of a step change in input, whichever is less. The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.~~

~~E) Analyzer lockout:~~

~~The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that must indicate when sample flow degradation for any gas other than NO causes:~~

- ~~• The measurement error to exceed 3 percent of the gas value used for checking; or~~

- ~~The Analyzer response time to exceed 13 seconds for a 90 percent step change in input.~~

~~The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.~~

~~3.0 Analyzer Requirements~~

~~3.1 Gas Calibration~~

~~A) General:~~

~~The Analyzer must automatically require and successfully pass a leak check and a gas calibration for HC, CO, CO₂, and O₂ by a method that is approved by the Department. The Analyzer must not allow an error of more than 2 percent of the readings using the high and low range span gases for TSI inspections. The Analyzer must automatically prohibit the performance of the tailpipe portion of the vehicle emissions inspection when readings exceed the 2 percent error tolerance. The Analyzer channels must be adjusted to the center of the allowable tolerance range as a result of the gas calibration procedure. The standard gases to be used to calibrate and audit the Analyzer must meet the requirements in the Federal Clean Air Act, §207(b) and described in Subpart W of Part 85 of Chapter I, Title 40 of the CFR. All standard gases purchased by the I/M Program Station for use in the Analyzer must conform to the requirements established by the BAR for emissions inspection analyzer calibration gases and the National Institute of Standards and Technology (NIST).~~

~~B) Gas Calibration Procedure:~~

- ~~The Analyzer must maintain accuracy between gas calibrations taking into account all errors, including noise, repeatability, drift, linearity, temperature, and barometric pressure;~~
- ~~The Analyzer must automatically require a zero gas calibration and a high and low range gas calibration for HC, CO, CO₂, and O₂, where applicable. The Analyzer must record the gas reading data prior to the adjustment and other data pertinent to control charting Analyzer performance;~~
- ~~The gas calibration must be accomplished by the following method: Calibration gases that meet the requirements of Section 3.1: Calibration Gases for TSI Analyzers must be introduced into the calibration port of the Analyzer. The pressure in the sample cell must be the same with the calibration gas flowing as with the sample flowing during an inspection. Once the pressure is the same, the Analyzer must perform a zero gas calibration and a leak check. The leak check must ensure that the entire sample system does not leak.~~

~~3.2 Calibration Gases for TSI Analyzers~~

The following gases must be used for the two-point calibration and audit:

A) Low-Range Calibration Gas

HC = 200 ppm propane

CO = 0.5 percent

CO₂ = 6.0 percent

O₂ = Shop Air

N₂ = Balance 99.99 percent pure

B) High-Range Calibration Gas

HC = 3200 ppm propane

CO = 8.0 percent

CO₂ = 12.0 percent

O₂ = Shop Air

N₂ = Balance 99.99 percent pure

3.3 Dilution

The flow rate of the Analyzer must not cause more than 10 percent dilution during sampling of vehicle exhaust gases from a 1.6-liter engine at normal idle. Ten percent dilution is defined as a sample of 90 percent exhaust and 10 percent ambient air.

3.4 Calibration Prompts and Gas Usage

The Analyzer must display prompts to guide the inspector through the gas calibration procedure in a manner that minimizes the amount of gas used. The Analyzer must be designed to keep the loss of calibration gas to less than 0.5-liter in 24 hours when the valve on the calibration gas bottle is left open.

3.5 Propane Equivalency Factor

The value of the PEF must range from 0.490 to 0.540 and be displayed in a manner acceptable to the Department for each gas audit and gas calibration point. If an optical bench must be replaced in the field, then the Contractor authorized repair technician must change any external labels to correspond to the PEF of the new bench. The Analyzer must incorporate an algorithm relating PEF to HC concentration. Corrections to the PEF must be made automatically and the corrected PEF value must range from 0.470 to 0.560.

APPENDIX F – WAIVERS FOR “NOT READY” VEHICLESaivers for “Not Ready” Vehicles

A vehicle owner may be eligible for a Waiver when their gasoline powered vehicle is “Not Ready” and the following conditions are met:

1. The vehicle is not subject to a modified OBDII test because of OBD deficiencies;
2. The vehicle has an official test performed showing a “Not Ready” status. The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer.
3. A second inspection has been performed showing the following:
 - 3.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 3.2 The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles;
 - 3.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 3.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
4. A third inspection has been performed by a second repair station showing the following:
 - 4.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 4.2 The initial and third test dates are separated by at least 14 days and the vehicle has traveled a minimum of 400 miles;
 - 4.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 4.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
5. At least one of the statements must come from the vehicle manufacturer’s dealership repair station. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a “Ready” status. The dealership must also document that the vehicle’s computer is up to date and functioning properly. The computer must be updated if required or recommended by the manufacturer. If the computer is updated the vehicle must complete the appropriate drive cycles following the update.
6. The cost requirements as set forth by this Regulation must be met in order to qualify for a Waiver. In order to count labor the repair station must employ individuals with current ASE L1, ASE A8, or other certifications approved by the Department.

A vehicle owner may be eligible for a waiver when their vehicle is "Not Ready" and the following conditions are met:

1. The vehicle is not subject to a modified OBDII test because of OBD deficiencies.
2. The vehicle has an official test performed showing a Not Ready status. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.
3. A second inspection has been performed showing the following:
 - a. Readiness monitors have not changed from Not Ready to Ready.
 - b. The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles.
 - c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.
 - d. A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
4. A third inspection has been performed by a second station showing the following:
 - a. Readiness monitors have not changed from Not Ready to Ready.
 - b. The initial and third test dates are separated by at least 14 days and the vehicle has travelled a minimum of 400 miles.
 - c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.
 - d. A statement is included from a second station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
5. At least one of the statements must come from the vehicle manufacturer's dealership repair service. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a Ready status.

Appendix G—Engine Switching

Bear River Health Department Regulation 2013-1 states:

“Engine switching shall be allowed only in accordance with EPA policy. Vehicles not meeting the requirements of Section 10.0 shall be deemed as tampered and are not eligible for a Certificate of Waiver, unless they are restored to the original engine and emission control configuration.”

- 1—Engine switching, if not done in accordance with EPA policy, is tampering.
- 2—A tampering inspection is not a component of the Cache County Emissions Program, except for 1998–2006 diesel vehicles and for any vehicle that applies for a waiver.
- 3—Engine switching shall be treated as follows:

Gas engine to gas engine

1995 and older vehicles—The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.

1996 and newer vehicles (8,500 lbs or less)—The vehicle must pass the OBD test.

1996–2007 vehicles (greater than 8,500 lbs)—The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.

2008 and newer vehicles (greater than 8,500 lbs and less than 14,000 lbs)—The vehicle must pass the OBD test.

2008 and newer vehicles (greater than 14,000 lbs)—The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.

Diesel engine to diesel engine

1997 and older vehicles—These vehicles are exempt from testing requirements.

Vehicles greater than 14,000 lbs—These vehicles are exempt from testing requirements.

1998–2006 vehicles (less than 14,000 lbs)—These vehicles must have a visual inspection. All emissions control devices required for the engine must be in place.

2007 and newer vehicles (less than 14,000 lbs)—The vehicle must pass the OBD test.

Gas engine to diesel engine

~~*DO NOT perform a two-speed idle test on these vehicles!~~

~~1997 and older engine—The I/M Program Station will send the vehicle to the Vehicle Technical Center where it will be issued an exemption.~~

~~1998—2006 engine—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.~~

~~2007 and newer engine—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.~~

~~—————Diesel engine to gas engine—————~~

~~1997 and older vehicle—These vehicles will likely be registered as diesel vehicle and will be exempt from testing requirements.~~

~~1998—2006 vehicles—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.~~

~~2007 and newer vehicles—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.~~



STATE OF UTAH

GARY R. HERBERT
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LIEUTENANT GOVERNOR

November 1, 2019

Gregory Sopkin, Regional Administrator
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Dear Mr. Sopkin:

On September 4, 2019, the Utah Air Quality Board adopted amendments to State Implementation Plan (SIP) Section X, Part A, *Vehicle Inspection and Maintenance Program, General Requirements and Applicability* and SIP Section X, Part F, *Vehicle Inspection and Maintenance Program, Cache County*. On the same day, the Board adopted amendments to Utah Administrative Code R307-110-31, *Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability* and R307-110-36, *Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County*. The rules incorporate by reference the State Implementation Plans listed above into the Utah Administrative Code.

Enclosed for your approval are the SIP and rule revisions described above. Supporting documentation is being submitted by the Utah Division of Air Quality. If you have questions about this request, please call Bryce Bird, Director of the Utah Division of Air Quality, at (801) 536-4064.

Sincerely,

Gary R. Herbert
Governor

Enclosures

UTAH

Administrative Documentation

SIP Section X, Vehicle Inspection and Maintenance Program, Parts A, General Requirements and Applicability and F, Cache County.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

**State of Utah
Department of Environmental Quality
Division of Air Quality
195 N. 1950 West
P.O. Box 144820
Salt Lake City, Utah 84114-4820
801-536-4000**

November 5, 2019

UTAH
ADMINISTRATIVE DOCUMENTATION November 2019

SIP Section X Parts A and F.

ADMINISTRATIVE DOCUMENTATION

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Chapter 2 Air Conservation Act

Part 1 General Provisions

19-2-101 Short title -- Policy of state and purpose of chapter -- Support of local and regional programs -- Provision of coordinated statewide program.

- (1) This chapter is known as the "Air Conservation Act."
- (2) It is the policy of this state and the purpose of this chapter to achieve and maintain levels of air quality which will protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the people, promote the economic and social development of this state, and facilitate the enjoyment of the natural attractions of this state.
- (3) Local and regional air pollution control programs shall be supported to the extent practicable as essential instruments to secure and maintain appropriate levels of air quality.
- (4) The purpose of this chapter is to:
 - (a) provide for a coordinated statewide program of air pollution prevention, abatement, and control;
 - (b) provide for an appropriate distribution of responsibilities among the state and local units of government;
 - (c) facilitate cooperation across jurisdictional lines in dealing with problems of air pollution not confined within single jurisdictions; and
 - (d) provide a framework within which air quality may be protected and consideration given to the public interest at all levels of planning and development within the state.

Renumbered and Amended by Chapter 112, 1991 General Session

19-2-102 Definitions.

As used in this chapter:

- (1) "Air pollutant" means a substance that qualifies as an air pollutant as defined in 42 U.S.C. Sec. 7602.
- (2) "Air pollutant source" means private and public sources of emissions of air pollutants.
- (3) "Air pollution" means the presence of an air pollutant in the ambient air in the quantities, for a duration, and under the conditions and circumstances that are injurious to human health or welfare, animal or plant life, or property, or would unreasonably interfere with the enjoyment of life or use of property, as determined by the rules adopted by the board.
- (4) "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.
- (5) "Asbestos" means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, actinolite-tremolite, and libby amphibole.
- (6) "Asbestos-containing material" means a material containing more than 1% asbestos, as determined using the method adopted in 40 C.F.R. Part 61, Subpart M, National Emission Standard for Asbestos.
- (7) "Asbestos inspection" means an activity undertaken to determine the presence or location, or to assess the condition of, asbestos-containing material or suspected asbestos-containing

material, whether by visual or physical examination, or by taking samples of the material.

(8) "Board" means the Air Quality Board.

(9) "Clean school bus" means the same as that term is defined in 42 U.S.C. Sec. 16091.

(10) "Director" means the director of the Division of Air Quality.

(11) "Division" means the Division of Air Quality created in Section 19-1-105.

(12) "Friable asbestos-containing material" means a material containing more than 1% asbestos, as determined using the method adopted in 40 C.F.R. Part 61, Subpart M, National Emission Standard for Asbestos, that hand pressure can crumble, pulverize, or reduce to powder when dry.

(13) "Indirect source" means a facility, building, structure, or installation which attracts or may attract mobile source activity that results in emissions of a pollutant for which there is a national standard.

Amended by Chapter 154, 2015 General Session

19-2-103 Members of board -- Appointment -- Terms -- Organization -- Per diem and expenses.

(1) The board consists of the following nine members:

(a) the following non-voting member, except that the member may vote to break a tie vote between the voting members:

(i) the executive director; or

(ii) an employee of the department designated by the executive director; and

(b) the following eight voting members, who shall be appointed by the governor with the consent of the Senate:

(i) one representative who:

(A) is not connected with industry;

(B) is an expert in air quality matters; and

(C) is a Utah-licensed physician, a Utah-licensed professional engineer, or a scientist with relevant training and experience;

(ii) two government representatives who do not represent the federal government;

(iii) one representative from the mining industry;

(iv) one representative from the fuels industry;

(v) one representative from the manufacturing industry;

(vi) one representative from the public who represents:

(A) an environmental nongovernmental organization; or

(B) a nongovernmental organization that represents community interests and does not represent industry interests; and

(vii) one representative from the public who is trained and experienced in public health.

(2) A member of the board shall:

(a) be knowledgeable about air pollution matters, as evidenced by a professional degree, a professional accreditation, or documented experience;

(b) be a resident of Utah;

(c) attend board meetings in accordance with the attendance rules made by the department under Subsection 19-1-201(1)(d)(i)(A); and

(d) comply with all applicable statutes, rules, and policies, including the conflict of interest rules made by the department under Subsection 19-1-201(1)(d)(i)(B).

(3) No more than five of the appointed members of the board shall belong to the same political

party.

(4) A majority of the members of the board may not derive any significant portion of their income from persons subject to permits or orders under this chapter.

(5)

(a) Members shall be appointed for a term of four years.

(b) Notwithstanding the requirements of Subsection (5)(a), the governor shall, at the time of appointment or reappointment, adjust the length of terms to ensure that the terms of board members are staggered so that half of the appointed board is appointed every two years.

(6) A member may serve more than one term.

(7) A member shall hold office until the expiration of the member's term and until the member's successor is appointed, but not more than 90 days after the expiration of the member's term.

(8) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term.

(9) The board shall elect annually a chair and a vice chair from its members.

(10)

(a) The board shall meet at least quarterly.

(b) Special meetings may be called by the chair upon the chair's own initiative, upon the request of the director, or upon the request of three members of the board.

(c) Three days' notice shall be given to each member of the board before a meeting.

(11) Five members constitute a quorum at a meeting, and the action of a majority of members present is the action of the board.

(12) A member may not receive compensation or benefits for the member's service, but may receive per diem and travel expenses in accordance with:

(a) Section 63A-3-106;

(b) Section 63A-3-107; and

(c) rules made by the Division of Finance pursuant to Sections 63A-3-106 and 63A-3-107.

Amended by Chapter 154, 2015 General Session

19-2-104 Powers of board.

(1) The board may make rules in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act:

(a) regarding the control, abatement, and prevention of air pollution from all sources and the establishment of the maximum quantity of air pollutants that may be emitted by an air pollutant source;

(b) establishing air quality standards;

(c) requiring persons engaged in operations that result in air pollution to:

(i) install, maintain, and use emission monitoring devices, as the board finds necessary;

(ii) file periodic reports containing information relating to the rate, period of emission, and composition of the air pollutant; and

(iii) provide access to records relating to emissions which cause or contribute to air pollution;

(d)

(i) implementing:

(A) Toxic Substances Control Act, Subchapter II, Asbestos Hazard Emergency Response, 15 U.S.C. 2601 et seq.;

- (B) 40 C.F.R. Part 763, Asbestos; and
- (C) 40 C.F.R. Part 61, National Emission Standards for Hazardous Air Pollutants, Subpart M, National Emission Standard for Asbestos; and
- (ii) reviewing and approving asbestos management plans submitted by local education agencies under the Toxic Substances Control Act, Subchapter II, Asbestos Hazard Emergency Response, 15 U.S.C. 2601 et seq.;
- (e) establishing a requirement for a diesel emission opacity inspection and maintenance program for diesel-powered motor vehicles;
- (f) implementing an operating permit program as required by and in conformity with Titles IV and V of the federal Clean Air Act Amendments of 1990;
- (g) establishing requirements for county emissions inspection and maintenance programs after obtaining agreement from the counties that would be affected by the requirements;
- (h) with the approval of the governor, implementing in air quality nonattainment areas employer-based trip reduction programs applicable to businesses having more than 100 employees at a single location and applicable to federal, state, and local governments to the extent necessary to attain and maintain ambient air quality standards consistent with the state implementation plan and federal requirements under the standards set forth in Subsection (2);
- (i) implementing lead-based paint training, certification, and performance requirements in accordance with 15 U.S.C. 2601 et seq., Toxic Substances Control Act, Subchapter IV -- Lead Exposure Reduction, Sections 402 and 406; and
- (j) to implement the requirements of Section 19-2-107.5.
- (2) When implementing Subsection (1)(h) the board shall take into consideration:
 - (a) the impact of the business on overall air quality; and
 - (b) the need of the business to use automobiles in order to carry out its business purposes.
- (3)
 - (a) The board may:
 - (i) hold a hearing that is not an adjudicative proceeding relating to any aspect of, or matter in, the administration of this chapter;
 - (ii) recommend that the director:
 - (A) issue orders necessary to enforce the provisions of this chapter;
 - (B) enforce the orders by appropriate administrative and judicial proceedings;
 - (C) institute judicial proceedings to secure compliance with this chapter; or
 - (D) advise, consult, contract, and cooperate with other agencies of the state, local governments, industries, other states, interstate or interlocal agencies, the federal government, or interested persons or groups; and
 - (iii) establish certification requirements for asbestos project monitors, which shall provide for experience-based certification of a person who:
 - (A) receives relevant asbestos training, as defined by rule; and
 - (B) has acquired a minimum of 1,000 hours of asbestos project monitoring related work experience.
 - (b) The board shall:
 - (i) to ensure compliance with applicable statutes and regulations:
 - (A) review a settlement negotiated by the director in accordance with Subsection 19-2-107(2)(b)(viii) that requires a civil penalty of \$25,000 or more; and
 - (B) approve or disapprove the settlement;
 - (ii) encourage voluntary cooperation by persons and affected groups to achieve the purposes

- of this chapter;
- (iii) meet the requirements of federal air pollution laws;
 - (iv) by rule in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, establish work practice and certification requirements for persons who:
 - (A) contract for hire to conduct demolition, renovation, salvage, encapsulation work involving friable asbestos-containing materials, or asbestos inspections if:
 - (I) the contract work is done on a site other than a residential property with four or fewer units; or
 - (II) the contract work is done on a residential property with four or fewer units where a tested sample contained greater than 1% of asbestos;
 - (B) conduct work described in Subsection (3)(b)(iv)(A) in areas to which the general public has unrestrained access or in school buildings that are subject to the federal Asbestos Hazard Emergency Response Act of 1986;
 - (C) conduct asbestos inspections in facilities subject to 15 U.S.C. 2601 et seq., Toxic Substances Control Act, Subchapter II - Asbestos Hazard Emergency Response; or
 - (D) conduct lead-based paint inspections in facilities subject to 15 U.S.C. 2601 et seq., Toxic Substances Control Act, Subchapter IV -- Lead Exposure Reduction;
 - (v) establish certification requirements for a person required under 15 U.S.C. 2601 et seq., Toxic Substances Control Act, Subchapter II - Asbestos Hazard Emergency Response, to be accredited as an inspector, management planner, abatement project designer, asbestos abatement contractor and supervisor, or an asbestos abatement worker;
 - (vi) establish certification procedures and requirements for certification of the conversion of a motor vehicle to a clean-fuel vehicle, certifying the vehicle is eligible for the tax credit granted in Section 59-7-605 or 59-10-1009;
 - (vii) establish certification requirements for a person required under 15 U.S.C. 2601 et seq., Toxic Control Act, Subchapter IV - Lead Exposure Reduction, to be accredited as an inspector, risk assessor, supervisor, project designer, abatement worker, renovator, or dust sampling technician; and
 - (viii) assist the State Board of Education in adopting school bus idling reduction standards and implementing an idling reduction program in accordance with Section 41-6a-1308.
- (4) A rule adopted under this chapter shall be consistent with provisions of federal laws, if any, relating to control of motor vehicles or motor vehicle emissions.
- (5) Nothing in this chapter authorizes the board to require installation of or payment for any monitoring equipment by the owner or operator of a source if the owner or operator has installed or is operating monitoring equipment that is equivalent to equipment which the board would require under this section.
- (6)
- (a) The board may not require testing for asbestos or related materials on a residential property with four or fewer units, unless:
 - (i) the property's construction was completed before January 1, 1981; or
 - (ii) the testing is for:
 - (A) a sprayed-on or painted on ceiling treatment that contained or may contain asbestos fiber;
 - (B) asbestos cement siding or roofing materials;
 - (C) resilient flooring products including vinyl asbestos tile, sheet vinyl products, resilient flooring backing material, whether attached or unattached, and mastic;

- (D) thermal-system insulation or tape on a duct or furnace; or
- (E) vermiculite type insulation materials.
- (b) A residential property with four or fewer units is subject to an abatement rule made under Subsection (1) or (3)(b)(iv) if:
 - (i) a sample from the property is tested for asbestos; and
 - (ii) the sample contains asbestos measuring greater than 1%.
- (7) The board may not issue, amend, renew, modify, revoke, or terminate any of the following that are subject to the authority granted to the director under Section 19-2-107 or 19-2-108:
 - (a) a permit;
 - (b) a license;
 - (c) a registration;
 - (d) a certification; or
 - (e) another administrative authorization made by the director.
- (8) A board member may not speak or act for the board unless the board member is authorized by a majority of a quorum of the board in a vote taken at a meeting of the board.
- (9) Notwithstanding Subsection (7), the board may exercise all authority granted to the board by a federally enforceable state implementation plan.

Amended by Chapter 154, 2015 General Session

19-2-105 Duties of board.

The board, in conjunction with the governing body of each county identified in Section 41-6a-1643 and other interested parties, shall order the director to perform an evaluation of the inspection and maintenance program developed under Section 41-6a-1643 including issues relating to:

- (1) the implementation of a standardized inspection and maintenance program;
- (2) out-of-state registration of vehicles used in Utah;
- (3) out-of-county registration of vehicles used within the areas required to have an inspection and maintenance program;
- (4) use of the farm truck exemption;
- (5) mechanic training programs;
- (6) emissions standards; and
- (7) emissions waivers.

Amended by Chapter 360, 2012 General Session

19-2-105.3 Clean fuel requirements for fleets.

- (1) As used in this section:
 - (a) "1990 Clean Air Act" means the federal Clean Air Act as amended in 1990.
 - (b) "Clean fuel" means:
 - (i) propane, compressed natural gas, or electricity;
 - (ii) other fuel the board determines annually on or before July 1 is at least as effective as fuels under Subsection (1)(b)(i) in reducing air pollution; and
 - (iii) other fuel that meets the clean fuel vehicle standards in the 1990 Clean Air Act.
 - (c) "Fleet" means 10 or more vehicles:
 - (i) owned or operated by a single entity as defined by board rule; and

- (ii) capable of being fueled or that are fueled at a central location.
- (d) "Fleet" does not include motor vehicles that are:
 - (i) held for lease or rental to the general public;
 - (ii) held for sale or used as demonstration vehicles by motor vehicle dealers;
 - (iii) used by motor vehicle manufacturers for product evaluations or tests;
 - (iv) authorized emergency vehicles as defined in Section 41-6a-102;
 - (v) registered under Title 41, Chapter 1a, Part 2, Registration, as farm vehicles;
 - (vi) special mobile equipment as defined in Section 41-1a-102;
 - (vii) heavy duty trucks with a gross vehicle weight rating of more than 26,000 pounds;
 - (viii) regularly used by employees to drive to and from work, parked at the employees' personal residences when they are not at their employment, and not practicably fueled at a central location;
 - (ix) owned, operated, or leased by public transit districts; or
 - (x) exempted by board rule.
- (2)
 - (a) After evaluation of reasonably available pollution control strategies, and as part of the state implementation plan demonstrating attainment of the national ambient air quality standards, the board may by rule require fleets in specified geographical areas to use clean fuels if the board determines fleet use of clean fuels is:
 - (i) necessary to demonstrate attainment of the national ambient air quality standards in an area where they are required; and
 - (ii) reasonably cost effective when compared to other similarly beneficial control strategies for demonstrating attainment of the national ambient air quality standards.
 - (b) A vehicle retrofit to operate on compressed natural gas in accordance with Section 19-1-406 qualifies as a clean fuel vehicle under this section.
- (3) After evaluation of reasonably available pollution control strategies, and as part of a state implementation plan demonstrating only maintenance of the national ambient air quality standards, the board may by rule require fleets in specified geographical areas to use clean fuels if the board determines fleet use of clean fuels is:
 - (a) necessary to demonstrate maintenance of the national ambient air quality standards in an area where they are required; and
 - (b) reasonably cost effective as compared with other similarly beneficial control strategies for demonstrating maintenance of the national ambient air quality standards.
- (4) Rules the board makes under this section may include:
 - (a) dates by which fleets are required to convert to clean fuels under the provisions of this section;
 - (b) definitions of fleet owners or operators;
 - (c) definitions of vehicles exempted from this section by rule;
 - (d) certification requirements for persons who install clean fuel conversion equipment, including testing and certification standards regarding installers; and
 - (e) certification fees for installers, established under Section 63J-1-504.
- (5) Implementation of this section and rules made under this section are subject to the reasonable availability of clean fuel in the local market as determined by the board.

Amended by Chapter 154, 2015 General Session

19-2-106 Rulemaking authority and procedure.

- (1)
 - (a) In carrying out the duties of Section 19-2-104, the board may make rules for the purpose of administering a program under the federal Clean Air Act different than the corresponding federal regulations which address the same circumstances if:
 - (i) the board holds a public comment period, as described in Title 63G, Chapter 3, Utah Administrative Rulemaking Act, and a public hearing; and
 - (ii) the board finds that the different rule will provide reasonable added protections to public health or the environment of the state or a particular region of the state.
 - (b) The board shall consider the differences between an industry that continuously produces emissions and an industry that episodically produces emissions, and make rules that reflect those differences.
- (2) The findings described in Subsection (1)(a)(ii) shall be:
 - (a) in writing; and
 - (b) based on evidence, studies, or other information contained in the record that relates to the state of Utah and type of source involved.
- (3) In making rules, the board may incorporate by reference corresponding federal regulations.

Amended by Chapter 80, 2015 General Session

19-2-107 Director -- Appointment -- Powers.

- (1) The executive director shall appoint the director. The director shall serve under the administrative direction of the executive director.
- (2)
 - (a) The director shall:
 - (i) prepare and develop comprehensive plans for the prevention, abatement, and control of air pollution in Utah;
 - (ii) advise, consult, and cooperate with other agencies of the state, the federal government, other states and interstate agencies, and affected groups, political subdivisions, and industries in furtherance of the purposes of this chapter;
 - (iii) review plans, specifications, or other data relative to air pollution control equipment or any part of the air pollution control equipment;
 - (iv) under the direction of the executive director, represent the state in all matters relating to interstate air pollution, including interstate compacts and similar agreements;
 - (v) secure necessary scientific, technical, administrative, and operational services, including laboratory facilities, by contract or otherwise;
 - (vi) encourage voluntary cooperation by persons and affected groups to achieve the purposes of this chapter;
 - (vii) encourage local units of government to handle air pollution within their respective jurisdictions on a cooperative basis and provide technical and consulting assistance to them;
 - (viii) determine by means of field studies and sampling the degree of air contamination and air pollution in all parts of the state;
 - (ix) monitor the effects of the emission of air pollutants from motor vehicles on the quality of the outdoor atmosphere in all parts of Utah and take appropriate responsive action;
 - (x) collect and disseminate information relating to air contamination and air pollution and conduct educational and training programs relating to air contamination and air pollution;

- (xi) assess and collect noncompliance penalties as required in Section 120 of the federal Clean Air Act, 42 U.S.C. Section 7420;
 - (xii) comply with the requirements of federal air pollution laws;
 - (xiii) subject to the provisions of this chapter, enforce rules through the issuance of orders, including:
 - (A) prohibiting or abating discharges of wastes affecting ambient air;
 - (B) requiring the construction of new control facilities or any parts of new control facilities or the modification, extension, or alteration of existing control facilities or any parts of new control facilities; or
 - (C) adopting other remedial measures to prevent, control, or abate air pollution; and
 - (xiv) as authorized by the board and subject to the provisions of this chapter, act as executive secretary of the board under the direction of the chairman of the board.
- (b) The director may:
- (i) employ full-time, temporary, part-time, and contract employees necessary to carry out this chapter;
 - (ii) subject to the provisions of this chapter, authorize an employee or representative of the department to enter at reasonable time and upon reasonable notice in or upon public or private property for the purposes of inspecting and investigating conditions and plant records concerning possible air pollution;
 - (iii) encourage, participate in, or conduct studies, investigations, research, and demonstrations relating to air pollution and its causes, effects, prevention, abatement, and control, as advisable and necessary for the discharge of duties assigned under this chapter, including the establishment of inventories of pollution sources;
 - (iv) collect and disseminate information relating to air pollution and the prevention, control, and abatement of it;
 - (v) cooperate with studies and research relating to air pollution and its control, abatement, and prevention;
 - (vi) subject to Subsection (3), upon request, consult concerning the following with a person proposing to construct, install, or otherwise acquire an air pollutant source in Utah:
 - (A) the efficacy of proposed air pollution control equipment for the source; or
 - (B) the air pollution problem that may be related to the source;
 - (vii) accept, receive, and administer grants or other funds or gifts from public and private agencies, including the federal government, for the purpose of carrying out any of the functions of this chapter;
 - (viii) subject to Subsection 19-2-104(3)(b)(i), settle or compromise a civil action initiated by the division to compel compliance with this chapter or the rules made under this chapter; or
 - (ix) subject to the provisions of this chapter, exercise all incidental powers necessary to carry out the purposes of this chapter, including certification to state or federal authorities for tax purposes that air pollution control equipment has been certified in conformity with Title 19, Chapter 12, Pollution Control Act.
- (3) A consultation described in Subsection (2)(b)(vi) does not relieve a person from the requirements of this chapter, the rules adopted under this chapter, or any other provision of law.

Amended by Chapter 154, 2015 General Session

19-2-107.5 Solid fuel burning.

- (1) The division shall create a:
 - (a) public awareness campaign, in consultation with representatives of the solid fuel burning industry, the healthcare industry, and members of the clean air community, on best wood burning practices and the effects of wood burning on air quality, specifically targeting nonattainment areas; and
 - (b) program to assist an individual to convert a dwelling to a natural gas, propane, or wood pellet heating source or a wood burning stove certified by the United States Environmental Protection Agency, as funding allows, if the individual:
 - (i) lives in a dwelling where a wood burning stove is the sole source of heat; and
 - (ii) is on the list of registered sole heating source homes.
- (2)
 - (a) The division may not impose a burning ban prohibiting burning during a specified seasonal period of time.
 - (b) Notwithstanding Subsection (2)(a), the division shall:
 - (i) allow burning:
 - (A) during local emergencies and utility outages; or
 - (B) if the primary purpose of the burning is to cook food; and
 - (ii) provide for exemptions, through registration with the division, for:
 - (A) devices that are sole sources of heat; or
 - (B) locations where natural gas service is limited or unavailable.
- (3) The division may seek private donations and federal sources of funding to supplement any funds appropriated by the Legislature to fulfill Subsection (1)(b).

Amended by Chapter 320, 2017 General Session

19-2-107.7 Water heater regulations.

- (1) As used in this section:
 - (a) "Natural gas-fired water heater" means a device that heats water by the combustion of natural gas to a thermostatically-controlled temperature not exceeding 210 degrees Fahrenheit for use external to the vessel at pressures not exceeding 160 pounds per square inch gauge.
 - (b) "Recreational vehicle" means a motor home, travel trailer, truck camper, or camping trailer, with or without motive power, designed for human habitation for recreational, emergency, or other occupancy.
- (2) A person may not sell or purchase a natural gas-fired water heater that is manufactured after July 1, 2018 with the intent to install it in Utah if the natural gas-fired water heater exceeds the applicable nitrogen oxide emission rate limit set in Title 15A, State Construction and Fire Codes Act.
- (3) A manufacturer in Utah shall display the model number and nitrogen oxide emission rate of a water heater complying with this section on:
 - (a) the shipping carton for the water heater; and
 - (b) the permanent rating plate of each water heater unit.
- (4) This section does not apply to a water heater unit that:
 - (a) uses a fuel other than natural gas;
 - (b) is used in a recreational vehicle; or
 - (c) is manufactured in Utah for shipment and use outside of Utah.

Enacted by Chapter 247, 2016 General Session

19-2-108 Notice of construction or modification of installations required -- Authority of director to prohibit construction -- Hearings -- Limitations on authority of director -- Inspections authorized.

(1) Notice shall be given to the director by a person planning to construct a new installation which will or might reasonably be expected to be a source or indirect source of air pollution or to make modifications to an existing installation which will or might reasonably be expected to increase the amount of or change the character or effect of air pollutants discharged, so that the installation may be expected to be a source or indirect source of air pollution, or by a person planning to install an air cleaning device or other equipment intended to control emission of air pollutants.

(2)

(a) The director may require, as a condition precedent to the construction, modification, installation, or establishment of the air pollutant source or indirect source, the submission of plans, specifications, and other information as he finds necessary to determine whether the proposed construction, modification, installation, or establishment will be in accord with applicable rules in force under this chapter.

(b) If within 90 days after the receipt of plans, specifications, or other information required under this subsection, the director determines that the proposed construction, installation, or establishment or any part of it will not be in accord with the requirements of this chapter or applicable rules or that further time, not exceeding three extensions of 30 days each, is required by the director to adequately review the plans, specifications, or other information, he shall issue an order prohibiting the construction, installation, or establishment of the air pollutant source or sources in whole or in part.

(3) In addition to any other remedies but prior to invoking any such other remedies, a person aggrieved by the issuance of an order either granting or denying a request for the construction of a new installation, shall, upon request, in accordance with the rules of the department, be entitled to a special adjudicative proceeding conducted by an administrative law judge as provided by Section 19-1-301.5.

(4) Any features, machines, and devices constituting parts of or called for by plans, specifications, or other information submitted under Subsection (1) shall be maintained in good working order.

(5) This section does not authorize the director to require the use of machinery, devices, or equipment from a particular supplier or produced by a particular manufacturer if the required performance standards may be met by machinery, devices, or equipment otherwise available.

(6)

(a) An authorized officer, employee, or representative of the director may enter and inspect any property, premise, or place on or at which an air pollutant source is located or is being constructed, modified, installed, or established at any reasonable time for the purpose of ascertaining the state of compliance with this chapter and the rules adopted under it.

(b)

(i) A person may not refuse entry or access to an authorized representative of the director who requests entry for purposes of inspection and who presents appropriate credentials.

(ii) A person may not obstruct, hamper, or interfere with an inspection.

(c) If requested, the owner or operator of the premises shall receive a report setting forth all

facts found which relate to compliance status.

Amended by Chapter 154, 2015 General Session

Amended by Chapter 441, 2015 General Session

19-2-109 Air quality standards -- Hearings on adoption -- Orders of director -- Adoption of emission control requirements.

(1)

- (a) The board, in adopting standards of quality for ambient air, shall conduct public hearings.
- (b) Notice of any public hearing for the consideration, adoption, or amendment of air quality standards shall specify the locations to which the proposed standards apply and the time, date, and place of the hearing.
- (c) The notice shall be:
 - (i)
 - (A) published at least twice in any newspaper of general circulation in the area affected; and
 - (B) published on the Utah Public Notice Website created in Section 63F-1-701, at least 20 days before the public hearing; and
 - (ii) mailed at least 20 days before the public hearing to the chief executive of each political subdivision of the area affected and to other persons the director has reason to believe will be affected by the standards.
- (d) The adoption of air quality standards or any modification or changes to air quality standards shall be by order of the director following formal action of the board with respect to the standards.
- (e) The order shall be published:
 - (i) in a newspaper of general circulation in the area affected; and
 - (ii) as required in Section 45-1-101.

(2)

- (a) The board may establish emission control requirements by rule that in its judgment may be necessary to prevent, abate, or control air pollution that may be statewide or may vary from area to area, taking into account varying local conditions.
- (b) In adopting these requirements, the board shall give notice and conduct public hearings in accordance with the requirements in Subsection (1).

Amended by Chapter 360, 2012 General Session

19-2-109.1 Operating permit required -- Emissions fee -- Implementation.

(1) As used in this section and Sections 19-2-109.2 and 19-2-109.3:

- (a) "1990 Clean Air Act" means the federal Clean Air Act as amended in 1990.
- (b) "EPA" means the federal Environmental Protection Agency.
- (c) "Operating permit" means a permit issued by the director to sources of air pollution that meet the requirements of Titles IV and V of the 1990 Clean Air Act.
- (d) "Program" means the air pollution operating permit program established under this section to comply with Title V of the 1990 Clean Air Act.
- (e) "Regulated pollutant" means the same as that term is defined in Title V of the 1990 Clean Air Act and implementing federal regulations.

(2) A person may not operate a source of air pollution required to have a permit under Title V of the 1990 Clean Air Act without having obtained an operating permit from the director under procedures the board establishes by rule.

(3)

(a) Operating permits issued under this section shall be for a period of five years unless the director makes a written finding, after public comment and hearing, and based on substantial evidence in the record, that an operating permit term of less than five years is necessary to protect the public health and the environment of the state.

(b) The director may issue, modify, or renew an operating permit only after providing public notice, an opportunity for public comment, and an opportunity for a public hearing.

(c) The director shall, in conformity with the 1990 Clean Air Act and implementing federal regulations, revise the conditions of issued operating permits to incorporate applicable federal regulations in conformity with Section 502(b)(9) of the 1990 Clean Air Act, if the remaining period of the permit is three or more years.

(d) The director may terminate, modify, revoke, or reissue an operating permit for cause.

(4)

(a) The board shall establish a proposed annual emissions fee that conforms with Title V of the 1990 Clean Air Act for each ton of regulated pollutant, applicable to all sources required to obtain a permit. The emissions fee established under this section is in addition to fees assessed under Section 19-2-108 for issuance of an approval order.

(b) In establishing the fee the board shall comply with the provisions of Section 63J-1-504 that require a public hearing and require the established fee to be submitted to the Legislature for its approval as part of the department's annual appropriations request.

(c) The fee shall cover all reasonable direct and indirect costs required to develop and administer the program and the small business assistance program established under Section 19-2-109.2. The director shall prepare an annual report of the emissions fees collected and the costs covered by those fees under this Subsection (4).

(d) The fee shall be established uniformly for all sources required to obtain an operating permit under the program and for all regulated pollutants.

(e) The fee may not be assessed for emissions of any regulated pollutant if the emissions are already accounted for within the emissions of another regulated pollutant.

(f) An emissions fee may not be assessed for any amount of a regulated pollutant emitted by any source in excess of 4,000 tons per year of that regulated pollutant.

(5) Emissions fees shall be based on actual emissions for a regulated pollutant unless a source elects, prior to the issuance or renewal of a permit, to base the fee during the period of the permit on allowable emissions for that regulated pollutant.

(6) If the owner or operator of a source subject to this section fails to timely pay an annual emissions fee, the director may:

(a) impose a penalty of not more than 50% of the fee, in addition to the fee, plus interest on the fee computed at 12% annually; or

(b) revoke the operating permit.

(7) The owner or operator of a source subject to this section may contest an emissions fee assessment or associated penalty in an adjudicative hearing under the Title 63G, Chapter 4, Administrative Procedures Act, and Section 19-1-301, as provided in this Subsection (7).

(a) The owner or operator shall pay the fee under protest prior to being entitled to a hearing.

Payment of an emissions fee or penalty under protest is not a waiver of the right to contest the

fee or penalty under this section.

(b) A request for a hearing under this Subsection (7) shall be made after payment of the emissions fee and within six months after the emissions fee was due.

(8) To reinstate an operating permit revoked under Subsection (6) the owner or operator shall pay all outstanding emissions fees, a penalty of not more than 50% of all outstanding fees, and interest on the outstanding emissions fees computed at 12% annually.

(9) All emissions fees and penalties collected by the department under this section shall be deposited in the General Fund as the Air Pollution Operating Permit Program dedicated credit to be used solely to pay for the reasonable direct and indirect costs incurred by the department in developing and administering the program and the small business assistance program under Section 19-2-109.2.

(10) Failure of the director to act on an operating permit application or renewal is a final administrative action only for the purpose of obtaining judicial review by any of the following persons to require the director to take action on the permit or its renewal without additional delay:

- (a) the applicant;
- (b) a person who participated in the public comment process; or
- (c) a person who could obtain judicial review of that action under applicable law.

Amended by Chapter 154, 2015 General Session

19-2-109.2 Small business assistance program.

(1) The division shall establish a small business stationary source technical and environmental compliance assistance program that conforms with Title V of the 1990 Clean Air Act to assist small businesses to comply with state and federal air pollution laws.

(2) There is created the Compliance Advisory Panel to advise and monitor the program created in Subsection (1). The seven panel members are:

- (a) two members who are not owners or representatives of owners of small business stationary air pollution sources, selected by the governor to represent the general public;
- (b) four members who are owners or who represent owners of small business stationary sources selected by leadership of the Utah Legislature as follows:
 - (i) one member selected by the majority leader of the Senate;
 - (ii) one member selected by the minority leader of the Senate;
 - (iii) one member selected by the majority leader of the House of Representatives; and
 - (iv) one member selected by the minority leader of the House of Representatives; and
- (c) one member selected by the executive director to represent the Division of Air Quality, Department of Environmental Quality.

(3)

(a) Except as required by Subsection (3)(b), as terms of current panel members expire, the department shall appoint each new member or reappointed member to a four-year term.

(b) Notwithstanding the requirements of Subsection (3)(a), the department shall, at the time of appointment or reappointment, adjust the length of terms to ensure that the terms of panel members are staggered so that approximately half of the panel is appointed every two years.

(4) Members may serve more than one term.

(5) Members shall hold office until the expiration of their terms and until their successors are appointed, but not more than 90 days after the expiration of their terms.

- (6) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term.
- (7) Every two years, the panel shall elect a chair from its members.
- (8)
 - (a) The panel shall meet as necessary to carry out its duties. Meetings may be called by the chair, the director, or upon written request of three of the members of the panel.
 - (b) Three days' notice shall be given to each member of the panel prior to a meeting.
- (9) Four members constitute a quorum at a meeting, and the action of the majority of members present is the action of the panel.
- (10) A member may not receive compensation or benefits for the member's service, but may receive per diem and travel expenses in accordance with:
 - (a) Section 63A-3-106;
 - (b) Section 63A-3-107; and
 - (c) rules made by the Division of Finance pursuant to Sections 63A-3-106 and 63A-3-107.

Amended by Chapter 154, 2015 General Session

19-2-109.3 Public access to information.

A copy of each permit application, compliance plan, emissions or compliance monitoring report, certification, and each operating permit issued under this chapter shall be made available to the public in accordance with Title 63G, Chapter 2, Government Records Access and Management Act.

Amended by Chapter 382, 2008 General Session

19-2-110 Violations -- Notice to violator -- Corrective action orders -- Conference, conciliation, and persuasion by director -- Hearings.

- (1) Whenever the director has reason to believe that a violation of any provision of this chapter or any rule issued under it has occurred, the director may serve written notice of the violation upon the alleged violator. The notice shall specify the provision of this chapter or rule alleged to be violated, the facts alleged to constitute the violation, and may include an order that necessary corrective action be taken within a reasonable time.
- (2) Nothing in this chapter prevents the director from making efforts to obtain voluntary compliance through warning, conference, conciliation, persuasion, or other appropriate means.
- (3) Hearings may be held before an administrative law judge as provided by Section 19-1-301.

Amended by Chapter 360, 2012 General Session

19-2-112 Generalized condition of air pollution creating emergency -- Sources causing imminent danger to health -- Powers of executive director -- Declaration of emergency.

- (1)
 - (a) Title 63G, Chapter 4, Administrative Procedures Act, and any other provision of law to the contrary notwithstanding, if the executive director finds that a generalized condition of air pollution exists and that it creates an emergency requiring immediate action to protect human health or safety, the executive director, with the concurrence of the governor, shall order

persons causing or contributing to the air pollution to reduce or discontinue immediately the emission of air pollutants.

(b) The order shall fix a place and time, not later than 24 hours after its issuance, for a hearing to be held before the governor.

(c) Not more than 24 hours after the commencement of this hearing, and without adjournment of it, the governor shall affirm, modify, or set aside the order of the executive director.

(2)

(a) In the absence of a generalized condition of air pollution referred to in Subsection (1), but if the executive director finds that emissions from the operation of one or more air pollutant sources is causing imminent danger to human health or safety, the executive director may commence adjudicative proceedings under Section 63G-4-502.

(b) Notwithstanding Section 19-1-301 or 19-1-301.5, the executive director may conduct the emergency adjudicative proceeding in place of an administrative law judge.

(3) Nothing in this section limits any power that the governor or any other officer has to declare an emergency and act on the basis of that declaration.

Amended by Chapter 154, 2015 General Session

19-2-113 Variances -- Judicial review.

(1)

(a) A person who owns or is in control of a plant, building, structure, establishment, process, or equipment may apply to the board for a variance from its rules.

(b) The board may grant the requested variance following an announced public meeting, if it finds, after considering the endangerment to human health and safety and other relevant factors, that compliance with the rules from which variance is sought would produce serious hardship without equal or greater benefits to the public.

(2) A variance may not be granted under this section until the board has considered the relative interests of the applicant, other owners of property likely to be affected by the discharges, and the general public.

(3) A variance or renewal of a variance shall be granted within the requirements of Subsection (1) and for time periods and under conditions consistent with the reasons for it, and within the following limitations:

(a) if the variance is granted on the grounds that there are no practicable means known or available for the adequate prevention, abatement, or control of the air pollution involved, it shall be only until the necessary means for prevention, abatement, or control become known and available, and subject to the taking of any substitute or alternate measures that the board may prescribe;

(b)

(i) if the variance is granted on the grounds that compliance with the requirements from which variance is sought will require that measures, because of their extent or cost, must be spread over a long period of time, the variance shall be granted for a reasonable time that, in the view of the board, is required for implementation of the necessary measures; and

(ii) a variance granted on this ground shall contain a timetable for the implementation of remedial measures in an expeditious manner and shall be conditioned on adherence to the timetable; or

(c) if the variance is granted on the ground that it is necessary to relieve or prevent hardship of

a kind other than that provided for in Subsection (3)(a) or (b), it may not be granted for more than one year.

(4)

(a) A variance granted under this section may be renewed on terms and conditions and for periods that would be appropriate for initially granting a variance.

(b) If a complaint is made to the board because of the variance, a renewal may not be granted unless, following an announced public meeting, the board finds that renewal is justified.

(c) To receive a renewal, an applicant shall submit a request for agency action to the board requesting a renewal.

(d) Immediately upon receipt of an application for renewal, the board shall give public notice of the application as required by its rules.

(5)

(a) A variance or renewal is not a right of the applicant or holder but may be granted at the board's discretion.

(b) A person aggrieved by the board's decision may obtain judicial review.

(c) Venue for judicial review of informal adjudicative proceedings is in the district court in which the air pollutant source is situated.

(6)

(a) The board may review a variance during the term for which it was granted.

(b) The review procedure is the same as that for an original application.

(c) The variance may be revoked upon a finding that:

(i) the nature or amount of emission has changed or increased; or

(ii) if facts existing at the date of the review had existed at the time of the original application, the variance would not have been granted.

(7) Nothing in this section and no variance or renewal granted pursuant to it shall be construed to prevent or limit the application of the emergency provisions and procedures of Section 19-2-112 to a person or property.

Amended by Chapter 154, 2015 General Session

19-2-114 Activities not in violation of chapter or rules.

The following are not a violation of this chapter or of a rule made under it:

(1) burning incident to horticultural or agricultural operations of:

(a) prunings from trees, bushes, and plants; or

(b) dead or diseased trees, bushes, and plants, including stubble;

(2) burning of weed growth along ditch banks incident to clearing these ditches for irrigation purposes;

(3) controlled heating of orchards or other crops to lessen the chances of their being frozen so long as the emissions from this heating do not violate minimum standards set by the board; and

(4) the controlled burning of not more than two structures per year by an organized and operating fire department for the purpose of training fire service personnel when the United States Weather Service clearing index for the area where the burn is to occur is above 500.

Amended by Chapter 154, 2015 General Session

19-2-115 Violations -- Penalties -- Reimbursement for expenses.

(1) As used in this section, the terms “knowingly,” “willfully,” and “criminal negligence” shall mean as defined in Section 76-2-103.

(2)

(a) A person who violates this chapter, or any rule, order, or permit issued or made under this chapter is subject in a civil proceeding to a penalty not to exceed \$10,000 per day for each violation.

(b) Subsection (2)(a) also applies to rules made under the authority of Section 19-2-104, for implementation of 15 U.S.C.A. 2601 et seq., Toxic Substances Control Act, Subchapter II - Asbestos Hazard Emergency Response.

(c) Penalties assessed for violations described in 15 U.S.C.A. 2647, Toxic Substances Control Act, Subchapter II - Asbestos Hazard Emergency Response, may not exceed the amounts specified in that section and shall be used in accordance with that section.

(3) A person is guilty of a class A misdemeanor and is subject to imprisonment under Section 76-3-204 and a fine of not more than \$25,000 per day of violation if that person knowingly violates any of the following under this chapter:

(a) an applicable standard or limitation;

(b) a permit condition; or

(c) a fee or filing requirement.

(4) A person is guilty of a third degree felony and is subject to imprisonment under Section 76-3-203 and a fine of not more than \$25,000 per day of violation who knowingly:

(a) makes any false material statement, representation, or certification, in any notice or report required by permit; or

(b) renders inaccurate any monitoring device or method required to be maintained by this chapter or applicable rules made under this chapter.

(5) Any fine or penalty assessed under Subsections (2) or (3) is in lieu of any penalty under Section 19-2-109.1.

(6) A person who willfully violates Section 19-2-120 is guilty of a class A misdemeanor.

(7) A person who knowingly violates any requirement of an applicable implementation plan adopted by the board, more than 30 days after having been notified in writing by the director that the person is violating the requirement, knowingly violates an order issued under Subsection 19-2-110(1), or knowingly handles or disposes of asbestos in violation of a rule made under this chapter is guilty of a third degree felony and subject to imprisonment under Section 76-3-203 and a fine of not more than \$25,000 per day of violation in the case of the first offense, and not more than \$50,000 per day of violation in the case of subsequent offenses.

(8)

(a) As used in this section:

(i) “Hazardous air pollutant” means any hazardous air pollutant listed under 42 U.S.C. Sec. 7412 or any extremely hazardous substance listed under 42 U.S.C. Sec. 11002(a)(2).

(ii) “Organization” means a legal entity, other than a government, established or organized for any purpose, and includes a corporation, company, association, firm, partnership, joint stock company, foundation, institution, trust, society, union, or any other association of persons.

(iii) “Serious bodily injury” means bodily injury which involves a substantial risk of death, unconsciousness, extreme physical pain, protracted and obvious disfigurement, or protracted loss or impairment of the function of a bodily member, organ, or mental faculty.

- (b)
 - (i) A person is guilty of a class A misdemeanor and subject to imprisonment under Section 76-3-204 and a fine of not more than \$25,000 per day of violation if that person with criminal negligence:
 - (A) releases into the ambient air any hazardous air pollutant; and
 - (B) places another person in imminent danger of death or serious bodily injury.
 - (ii) As used in this Subsection (8)(b), "person" does not include an employee who is carrying out the employee's normal activities and who is not a part of senior management personnel or a corporate officer.
- (c) A person is guilty of a second degree felony and is subject to imprisonment under Section 76-3-203 and a fine of not more than \$50,000 per day of violation if that person:
 - (i) knowingly releases into the ambient air any hazardous air pollutant; and
 - (ii) knows at the time that the person is placing another person in imminent danger of death or serious bodily injury.
- (d) If a person is an organization, it shall, upon conviction of violating Subsection (8)(c), be subject to a fine of not more than \$1,000,000.
- (e)
 - (i) A defendant who is an individual is considered to have acted knowingly under Subsections (8)(c) and (d), if:
 - (A) the defendant's conduct placed another person in imminent danger of death or serious bodily injury; and
 - (B) the defendant was aware of or believed that there was an imminent danger of death or serious bodily injury to another person.
 - (ii) Knowledge possessed by a person other than the defendant may not be attributed to the defendant.
 - (iii) Circumstantial evidence may be used to prove that the defendant possessed actual knowledge, including evidence that the defendant took affirmative steps to be shielded from receiving relevant information.
- (f)
 - (i) It is an affirmative defense to prosecution under this Subsection (8) that the conduct charged was freely consented to by the person endangered and that the danger and conduct charged were reasonably foreseeable hazards of:
 - (A) an occupation, a business, a profession; or
 - (B) medical treatment or medical or scientific experimentation conducted by professionally approved methods and the other person was aware of the risks involved prior to giving consent.
 - (ii) The defendant has the burden of proof to establish any affirmative defense under this Subsection (8)(f) and shall prove that defense by a preponderance of the evidence.
- (9)
 - (a) Except as provided in Subsection (9)(b), and unless prohibited by federal law, all penalties assessed and collected under the authority of this section shall be deposited in the General Fund.
 - (b) The department may reimburse itself and local governments from money collected from civil penalties for extraordinary expenses incurred in environmental enforcement activities.
 - (c) The department shall regulate reimbursements by making rules in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, that:

- (i) define qualifying environmental enforcement activities; and
- (ii) define qualifying extraordinary expenses.

Amended by Chapter 360, 2012 General Session

19-2-116 Injunction or other remedies to prevent violations -- Civil actions not abridged.

- (1) Action under Section 19-2-115 does not bar enforcement of this chapter, or any of the rules adopted under it or any orders made under it by injunction or other appropriate remedy. The director has the power to institute and maintain in the name of the state any and all enforcement proceedings.
- (2) This chapter does not abridge, limit, impair, create, enlarge, or otherwise affect substantively or procedurally the right of any person to damages or other relief on account of injury to persons or property and to maintain any action or other appropriate proceeding for this purpose.
- (3)
 - (a) In addition to any other remedy created in this chapter, the director may initiate an action for appropriate injunctive relief:
 - (i) upon failure of any person to comply with:
 - (A) any provision of this chapter;
 - (B) any rule adopted under this chapter; or
 - (C) any final order made by the board, the director, or the executive director; and
 - (ii) when it appears necessary for the protection of health and welfare.
 - (b) The attorney general shall bring injunctive relief actions on request.
 - (c) A bond is not required.

Amended by Chapter 360, 2012 General Session

19-2-117 Attorney general as legal advisor to board -- Duties of attorney general and county attorneys.

- (1) Except as provided in Section 63G-7-902, the attorney general is the legal advisor to the board and the director and shall defend them or any of them in all actions or proceedings brought against them or any of them.
- (2) The county attorney in the county in which a cause of action arises may, upon request of the board or the director, bring an action, civil or criminal, to abate a condition which exists in violation of, or to prosecute for the violation of or to enforce, this chapter or the standards, orders, or rules of the board or the director issued under this chapter.
- (3) The director may bring an action and be represented by the attorney general.
- (4) In the event a person fails to comply with a cease and desist order of the board or the director that is not subject to a stay pending administrative or judicial review, the director may initiate an action for, and is entitled to, injunctive relief to prevent any further or continued violation of the order.

Amended by Chapter 154, 2015 General Session

19-2-118 Violation of injunction evidence of contempt.

Failure to comply with the terms of any injunction issued under this chapter is prima facie evidence of contempt which is punishable as for other civil contempts.

Renumbered and Amended by Chapter 112, 1991 General Session

19-2-119 Civil or criminal remedies not excluded -- Actionable rights under chapter -- No liability for acts of God or other catastrophes.

- (1) Existing civil or criminal remedies for a wrongful action that is a violation of the law are not excluded by this chapter.
- (2) Except as provided in Sections 19-1-301 and 19-1-301.5, and rules implementing those provisions, persons other than the state or the board do not acquire actionable rights by virtue of this chapter.
- (3) The liabilities imposed for violation of this chapter are not imposed for a violation caused by an act of God, war, strike, riot, or other catastrophe.

Amended by Chapter 154, 2015 General Session

19-2-120 Information required of owners or operators of air pollutant sources.

The owner or operator of a stationary air pollutant source in the state shall furnish to the director the reports required by rules made in accordance with Section 19-2-104 and any other information the director finds necessary to determine whether the source is in compliance with state and federal regulations and standards. The information shall be correlated with applicable emission standards or limitations and shall be available to the public during normal business hours at the office of the division.

Amended by Chapter 154, 2015 General Session

19-2-121 Ordinances of political subdivisions authorized.

Any political subdivision of the state may enact and enforce ordinances to control air pollution that are consistent with this chapter.

Renumbered and Amended by Chapter 112, 1991 General Session

19-2-122 Cooperative agreements between political subdivisions and department.

- (1) A political subdivision of the state may enter into and perform, with other political subdivisions of the state or with the department, contracts and agreements as they find proper for establishing, planning, operating, and financing air pollution programs.
- (2) The agreements may provide for an agency to:
 - (a) supervise and operate an air pollution program;
 - (b) prescribe the agency's powers and duties; and
 - (c) fix the compensation of the agency's members and employees.

Amended by Chapter 154, 2015 General Session

19-2-128 Air Quality Policy Advisory Board created -- Composition -- Responsibility -- Terms of office -- Compensation.

- (1) There is created the Air Quality Policy Advisory Board consisting of the following 10 voting members:

- (a) two members of the Senate, appointed by the president of the Senate;
 - (b) three members of the House of Representatives, appointed by the speaker of the House of Representatives;
 - (c) the director;
 - (d) one representative of industry interests, appointed by the president of the Senate;
 - (e) one representative of business or economic development interests, appointed by the speaker of the House of Representatives, who has expertise in air quality matters;
 - (f) one representative of the academic community, appointed by the governor, who has expertise in air quality matters; and
 - (g) one representative of a nongovernmental organization, appointed by the governor, who:
 - (i) represents community interests;
 - (ii) does not represent industry or business interests; and
 - (iii) has expertise in air quality matters.
- (2) The Air Quality Policy Advisory Board shall:
- (a) seek the best available science to identify legislative actions to improve air quality;
 - (b) identify and prioritize potential legislation and funding that will improve air quality; and
 - (c) make recommendations to the Legislature on how to improve air quality in the state.
- (3)
- (a) Except as required by Subsection (3)(b), members appointed under Subsections (1)(d), (e), (f), and (g) are appointed to serve four-year terms.
 - (b) Notwithstanding the requirements of Subsection (3)(a), the governor, president of the Senate, and speaker of the House of Representatives shall, at the time of appointment or reappointment, adjust the length of terms to ensure that the terms of members are staggered so that approximately half of the advisory board is appointed every two years.
 - (c) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term.
- (4) The advisory board shall elect one member to serve as chair of the advisory board for a term of one year.
- (5) Compensation for a member of the advisory board who is a legislator shall be paid in accordance with Section 36-2-2 and Legislative Joint Rules, Title 5, Chapter 3, Legislator Compensation.
- (6) A member of the advisory board who is not a legislator may not receive compensation or benefits for the member's service, but may receive per diem and travel expenses in accordance with:
- (a) Section 63A-3-106;
 - (b) Section 63A-3-107; and
 - (c) rules made by the Division of Finance pursuant to Sections 63A-3-106 and 63A-3-107.
- (7) The department shall provide staff support for the advisory board.

Enacted by Chapter 140, 2017 General Session

19-2-129 Gasoline vapor recovery -- Penalties.

- (1) As used in this section:
- (a) "Gasoline cargo tank" means a tank that:
 - (i) is intended to hold gasoline;
 - (ii) has a capacity of 1,000 gallons or more; and

- (iii) is attached to or intended to be drawn by a motor vehicle.
- (b) "Operator" means an individual who controls a motor vehicle:
 - (i) to which a gasoline cargo tank is attached; or
 - (ii) that draws a gasoline cargo tank.
- (c) "Underground storage tank" means the same as that term is defined in Section 19-6-102.
- (2) The operator of a gasoline cargo tank shall comply with requirements of this section if the operator:
 - (a) permits the loading of gasoline into the gasoline cargo tank; or
 - (b) loads an underground storage tank with gasoline from the gasoline cargo tank.
- (3) Except as provided in Subsection (6), the operator of a gasoline cargo tank may permit the loading of gasoline into a tank described in Subsection (2) or load an underground storage tank with gasoline from the gasoline cargo tank described in Subsection (1) only if:
 - (a) emissions from the tank that dispenses 10,000 gallons or more in any one calendar month are controlled by the use of:
 - (i) a properly installed and maintained vapor collection and control system that is equipped with fittings that:
 - (A) make a vapor-tight connection; and
 - (B) prevent the release of gasoline vapors by automatically closing upon disconnection; and
 - (ii) submerged filling or bottom filling methods; and
 - (b) the resulting vapor emitted into the air does not exceed the levels described in Subsection (4).
- (4) Vapor emitted into the air as a result of the loading of a tank under Subsection (3) may not exceed 0.640 pounds per 1,000 gallons transferred.
- (5)
 - (a) The department may fine an operator who violates this section:
 - (i) up to \$1,000 for a first offense; or
 - (ii) up to \$2,000 for a second offense.
 - (b) An operator who violates this section is guilty of a class C misdemeanor for a third or subsequent offense.
- (6) If a facility at which an underground storage tank is located does not have the equipment necessary for an operator of a gasoline cargo tank to comply with Subsection (3), the operator is excused from the requirements of Subsections (3) and (4) and may not be fined or penalized under Subsection (5).

Enacted by Chapter 395, 2017 General Session

Part 2

Clean Air Retrofit, Replacement, and Off-road Technology Program

19-2-201 Title.

This part is known as the "Clean Air Retrofit, Replacement, and Off-road Technology Program."

Enacted by Chapter 295, 2014 General Session

19-2-202 Definitions.

As used in this part:

- (1) "Board" means the Air Quality Board.
- (2) "Certified" means certified by the United States Environmental Protection Agency or the California Air Resources Board to meet appropriate emission standards.
- (3) "Cost" means the total reasonable cost of a project eligible for a grant under the fund, including the cost of labor.
- (4) "Director" means the director of the Division of Air Quality.
- (5) "Division" means the Division of Air Quality, created in Subsection 19-1-105(1)(a).
- (6) "Eligible equipment" means equipment with engines, including stationary generators and pumps, operated and, if applicable, permitted in Utah.
- (7) "Eligible vehicle" means a vehicle operated and, if applicable, registered in Utah that is:
 - (a) a medium-duty or heavy-duty transit bus;
 - (b) a school bus as defined in Section 53-3-102;
 - (c) a medium-duty or heavy-duty truck with a gross vehicle weight rating of at least 16,001 GVWR;
 - (d) a locomotive; or
 - (e) another type of vehicle identified by the board in rule as being a significant potential source of air pollution, as defined in Section 19-2-102.
- (8) "Verified" means verified by the United States Environmental Protection Agency or the California Air Resources Board to reduce air emissions and meet durability requirements.

Amended by Chapter 321, 2016 General Session

19-2-203 Grants and programs -- Conditions.

- (1) The director may make grants for implementing:
 - (a) verified technologies for eligible vehicles or equipment; and
 - (b) certified vehicles, engines, or equipment.
- (2)
 - (a) The division may develop programs, including exchange, rebate, or low-cost purchase programs, to encourage replacement of:
 - (i) landscaping and maintenance equipment with equipment that is lower in emissions; and
 - (ii) other equipment or products identified by the board in rule as being a significant potential source of air pollution, as defined in Subsection 19-2-102(3).
 - (b) The division may enter into agreements with local health departments to administer the programs described in Subsection (2)(a).
- (3) As a condition for receiving the grant, a person receiving a grant under Subsection (1) or receiving a grant under this Subsection (3) shall agree to:
 - (a) provide information to the division about the vehicles, equipment, or technology acquired with the grant proceeds;
 - (b) allow inspections by the division to ensure compliance with the terms of the grant;
 - (c) permanently disable replaced vehicles, engines, and equipment from use; and
 - (d) comply with the conditions for the grant.
- (4) Grants and programs under Subsections (1) and (2) may be administered using a rebate program.

(5) Grants issued under this section may not exceed the actual cost of the project.

Enacted by Chapter 295, 2014 General Session

19-2-204 Duties and authorities -- Rulemaking.

(1) The board may, by following the procedures and requirements of Title 63G, Chapter 3, Utah Administrative Rulemaking Act, make rules:

- (a) specifying the amount of money to be dedicated annually for grants;
- (b) specifying criteria the director shall consider in prioritizing and awarding grants, including:
 - (i) a preference for awarding a grant to an individual who has already secured some other source of funding; and
 - (ii) a limitation on the types of vehicles that are eligible for funds;
- (c) specifying the terms of a grant or exchange under Subsections 19-2-203(2), (3), and (4);
- (d) specifying the procedures to be used in the grant and exchange programs authorized in Subsections 19-2-203(2), (3), and (5); and
- (e) requiring all grant applicants to apply on forms provided by the division.

(2) The division shall:

- (a) administer funds to encourage vehicle and equipment owners and operators to reduce emissions from vehicles and equipment;
- (b) provide forms for application for a grant or exchange under Subsection 19-2-203(2) or (3); and
- (c) provide information about which vehicles, engines, or equipment are certified and which technology is verified as provided in this part.

(3) The division may inspect vehicles, equipment, or technology for which a grant was made to ensure compliance with the terms of the grant.

Enacted by Chapter 295, 2014 General Session

Part 3

Conversion to Alternative Fuel Grant Program

19-2-301 Title.

This part is known as the "Conversion to Alternative Fuel Grant Program."

Enacted by Chapter 381, 2015 General Session

19-2-302 Definitions.

As used in this part:

- (1) "Air quality standards" means vehicle emission standards equal to or greater than the standards established in bin 4 in Table S04-1 of 40 C.F.R. 86.1811-04(c)(6).
- (2) "Alternative fuel" means:
 - (a) propane, natural gas, or electricity; or
 - (b) other fuel that the board determines, by rule, to be:
 - (i) at least as effective in reducing air pollution as the fuels listed in Subsection (2)(a); or

- (ii) substantially more effective in reducing air pollution as the fuel for which the engine was originally designed.
- (3) "Board" means the Air Quality Board.
- (4) "Clean fuel grant" means a grant awarded under this part from the Conversion to Alternative Fuel Grant Program Fund created in Section 19-1-403.3 for reimbursement for a portion of the incremental cost of an OEM vehicle or the cost of conversion equipment.
- (5) "Conversion equipment" means equipment designed to:
 - (a) allow an eligible vehicle to operate on an alternative fuel; and
 - (b) reduce an eligible vehicle's emissions of regulated pollutants, as demonstrated by:
 - (i) certification of the conversion equipment by the Environmental Protection Agency or by a state or country that has certification standards that are recognized, by rule, by the board;
 - (ii) testing the eligible vehicle, before and after the installation of the equipment, in accordance with 40 C.F.R. Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines, using all fuel the motor vehicle is capable of using;
 - (iii) for a retrofit natural gas vehicle that is retrofit in accordance with Section 19-1-406, satisfying the emission standards described in Section 19-1-406; or
 - (iv) any other test or standard recognized by board rule, made in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act.
- (6) "Cost" means the total reasonable cost of a conversion kit and the paid labor, if any, required to install it.
- (7) "Director" means the director of the Division of Air Quality.
- (8) "Division" means the Division of Air Quality, created in Subsection 19-1-105(1)(a).
- (9) "Eligible vehicle" means a:
 - (a) commercial vehicle, as defined in Section 41-1a-102;
 - (b) farm tractor, as defined in Section 41-1a-102; or
 - (c) motor vehicle, as defined in Section 41-1a-102.

Amended by Chapter 369, 2016 General Session

19-2-303 Grants and programs -- Conditions.

- (1) The director may make grants from the Conversion to Alternative Fuel Grant Program Fund created in Section 19-1-403.3 to a person who installs conversion equipment on an eligible vehicle as described in this part.
- (2) A person who installs conversion equipment on an eligible vehicle:
 - (a) may apply to the division for a grant to offset the cost of installation; and
 - (b) shall pass along any savings on the cost of conversion equipment to the owner of the eligible vehicle being converted in the amount of grant money received.
- (3) As a condition for receiving the grant, a person who installs conversion equipment shall agree to:
 - (a) provide information to the division about the eligible vehicle to be converted with the grant proceeds;
 - (b) allow inspections by the division to ensure compliance with the terms of the grant; and
 - (c) comply with the conditions for the grant.
- (4) A grant issued under this section may not exceed the lesser of 50% of the cost of the conversion system and associated labor, or \$2,500, per converted eligible vehicle.

Amended by Chapter 369, 2016 General Session

19-2-304 Duties and authorities -- Rulemaking.

(1) The board may, by following the procedures and requirements of Title 63G, Chapter 3, Utah Administrative Rulemaking Act, make rules:

- (a) specifying the amount of money to be dedicated annually for grants under this part;
- (b) specifying criteria the director shall consider in prioritizing and awarding grants, including a limitation on the types of vehicles that are eligible for funds;
- (c) specifying the minimum qualifications of a person who:
 - (i) installs conversion equipment on an eligible vehicle; and
 - (ii) receives a grant from the division;
- (d) specifying the terms of a grant; and
- (e) requiring all grant applicants to apply on forms provided by the division.

(2) The division shall:

- (a) administer the Conversion to Alternative Fuel Grant Program Fund to encourage eligible vehicle owners to reduce emissions from eligible vehicles; and
- (b) provide information about which conversion technology meets the requirements of this part.

(3) The division may inspect vehicles for which a grant was made to ensure compliance with the terms of the grant.

Amended by Chapter 369, 2016 General Session

19-2-305 Limitation on applying for a tax credit.

An owner of an eligible vehicle who receives the savings on the cost of conversion equipment, as described in Subsection 19-2-303(2)(b), may not claim a tax credit for the conversion under Section 59-7-605 or 59-10-1009 unless the savings are less than the tax credit authorized by those sections, in which case the owner may claim a tax credit in the amount of the difference.

Enacted by Chapter 381, 2015 General Session

Chapter 3 Utah Administrative Rulemaking Act

Part 1 General Provisions

63G-3-101 Title.

This chapter is known as the “Utah Administrative Rulemaking Act.”

Renumbered and Amended by Chapter 382, 2008 General Session

63G-3-102 Definitions.

As used in this chapter:

- (1) “Administrative record” means information an agency relies upon when making a rule under this chapter including:
 - (a) the proposed rule, change in the proposed rule, and the rule analysis form;
 - (b) the public comment received and recorded by the agency during the public comment period;
 - (c) the agency’s response to the public comment;
 - (d) the agency’s analysis of the public comment; and
 - (e) the agency’s report of its decision-making process.
- (2) “Agency” means each state board, authority, commission, institution, department, division, officer, or other state government entity other than the Legislature, its committees, the political subdivisions of the state, or the courts, which is authorized or required by law to make rules, adjudicate, grant or withhold licenses, grant or withhold relief from legal obligations, or perform other similar actions or duties delegated by law.
- (3) “Bulletin” means the Utah State Bulletin.
- (4) “Catchline” means a short summary of each section, part, rule, or title of the code that follows the section, part, rule, or title reference placed before the text of the rule and serves the same function as boldface in legislation as described in Section 68-3-13.
- (5) “Code” means the body of all effective rules as compiled and organized by the division and entitled “Utah Administrative Code.”
- (6) “Department” means the Department of Administrative Services created in Section 63A-1-104.
- (7) “Effective” means operative and enforceable.
- (8) “Executive director” means the executive director of the department.
- (9)
 - (a) “File” means to submit a document to the office as prescribed by the department.
 - (b) “Filing date” means the day and time the document is recorded as received by the office.
- (10) “Interested person” means any person affected by or interested in a proposed rule, amendment to an existing rule, or a nonsubstantive change made under Section 63G-3-402.
- (11) “Office” means the Office of Administrative Rules created in Section 63G-3-401.
- (12) “Order” means an agency action that determines the legal rights, duties, privileges, immunities, or other interests of one or more specific persons, but not a class of persons.
- (13) “Person” means any individual, partnership, corporation, association, governmental entity,

or public or private organization of any character other than an agency.

(14) “Publication” or “publish” means making a rule available to the public by including the rule or a summary of the rule in the bulletin.

(15) “Publication date” means the inscribed date of the bulletin.

(16) “Register” may include an electronic database.

(17)

(a) “Rule” means an agency’s written statement that:

(i) is explicitly or implicitly required by state or federal statute or other applicable law;

(ii) implements or interprets a state or federal legal mandate; and

(iii) applies to a class of persons or another agency.

(b) “Rule” includes the amendment or repeal of an existing rule.

(c) “Rule” does not mean:

(i) orders;

(ii) an agency’s written statement that applies only to internal management and that does not restrict the legal rights of a public class of persons or another agency;

(iii) the governor’s executive orders or proclamations;

(iv) opinions issued by the attorney general’s office;

(v) declaratory rulings issued by the agency according to Section 63G-4-503 except as required by Section 63G-3-201;

(vi) rulings by an agency in adjudicative proceedings, except as required by Subsection 63G-3-201(6); or

(vii) an agency written statement that is in violation of any state or federal law.

(18) “Rule analysis” means the format prescribed by the department to summarize and analyze rules.

(19) “Small business” means a business employing fewer than 50 persons.

(20) “Substantive change” means a change in a rule that affects the application or results of agency actions.

Amended by Chapter 193, 2016 General Session

Part 2

Circumstances Requiring Rulemaking - Status of Administrative Rules

63G-3-201 When rulemaking is required.

(1) Each agency shall:

(a) maintain a current version of its rules; and

(b) make it available to the public for inspection during its regular business hours.

(2) In addition to other rulemaking required by law, each agency shall make rules when agency action:

(a) authorizes, requires, or prohibits an action;

(b) provides or prohibits a material benefit;

(c) applies to a class of persons or another agency; and

(d) is explicitly or implicitly authorized by statute.

(3) Rulemaking is also required when an agency issues a written interpretation of a state or federal legal mandate.

- (4) Rulemaking is not required when:
- (a) agency action applies only to internal agency management, inmates or residents of a state correctional, diagnostic, or detention facility, persons under state legal custody, patients admitted to a state hospital, members of the state retirement system, or students enrolled in a state education institution;
 - (b) a standardized agency manual applies only to internal fiscal or administrative details of governmental entities supervised under statute;
 - (c) an agency issues policy or other statements that are advisory, informative, or descriptive, and do not conform to the requirements of Subsections (2) and (3); or
 - (d) an agency makes nonsubstantive changes in a rule, except that the agency shall file all nonsubstantive changes in a rule with the office.
- (5)
- (a) A rule shall enumerate any penalty authorized by statute that may result from its violation, subject to Subsections (5)(b) and (c).
 - (b) A violation of a rule may not be subject to the criminal penalty of a class C misdemeanor or greater offense, except as provided under Subsection (5)(c).
 - (c) A violation of a rule may be subject to a class C misdemeanor or greater criminal penalty under Subsection (5)(a) when:
 - (i) authorized by a specific state statute;
 - (ii) a state law and programs under that law are established in order for the state to obtain or maintain primacy over a federal program; or
 - (iii) state civil or criminal penalties established by state statute regarding the program are equivalent to or less than corresponding federal civil or criminal penalties.
- (6) Each agency shall enact rules incorporating the principles of law not already in its rules that are established by final adjudicative decisions within 120 days after the decision is announced in its cases.
- (7)
- (a) Each agency may enact a rule that incorporates by reference:
 - (i) all or any part of another code, rule, or regulation that has been adopted by a federal agency, an agency or political subdivision of this state, an agency of another state, or by a nationally recognized organization or association;
 - (ii) state agency implementation plans mandated by the federal government for participation in the federal program;
 - (iii) lists, tables, illustrations, or similar materials that are subject to frequent change, fully described in the rule, and are available for public inspection; or
 - (iv) lists, tables, illustrations, or similar materials that the executive director or the executive director's designee determines are too expensive to reproduce in the administrative code.
 - (b) Rules incorporating materials by reference shall:
 - (i) be enacted according to the procedures outlined in this chapter;
 - (ii) state that the referenced material is incorporated by reference;
 - (iii) state the date, issue, or version of the material being incorporated; and
 - (iv) define specifically what material is incorporated by reference and identify any agency deviations from it.
 - (c) The agency shall identify any substantive changes in the material incorporated by reference by following the rulemaking procedures of this chapter.
 - (d) The agency shall maintain a complete and current copy of the referenced material

available for public review at the agency and at the office.

(8)

(a) This chapter is not intended to inhibit the exercise of agency discretion within the limits prescribed by statute or agency rule.

(b) An agency may enact a rule creating a justified exception to a rule.

(9) An agency may obtain assistance from the attorney general to ensure that its rules meet legal and constitutional requirements.

Amended by Chapter 181, 2017 General Session

63G-3-202 Rules having the effect of law.

(1) An agency's written statement is a rule if it conforms to the definition of a rule under Section 63G-3-102, but the written statement is not enforceable unless it is made as a rule in accordance with the requirements of this chapter.

(2) An agency's written statement that is made as a rule in accordance with the requirements of this chapter is enforceable and has the effect of law.

Renumbered and Amended by Chapter 382, 2008 General Session

Part 3 Rulemaking Procedures

63G-3-301 Rulemaking procedure.

(1) An agency authorized to make rules is also authorized to amend or repeal those rules.

(2) Except as provided in Sections 63G-3-303 and 63G-3-304, when making, amending, or repealing a rule agencies shall comply with:

(a) the requirements of this section;

(b) consistent procedures required by other statutes;

(c) applicable federal mandates; and

(d) rules made by the department to implement this chapter.

(3) Subject to the requirements of this chapter, each agency shall develop and use flexible approaches in drafting rules that meet the needs of the agency and that involve persons affected by the agency's rules.

(4)

(a) Each agency shall file its proposed rule and rule analysis with the office.

(b) Rule amendments shall be marked with new language underlined and deleted language struck out.

(c)

(i) The office shall publish the information required under Subsection (8) on the rule analysis and the text of the proposed rule in the next issue of the bulletin.

(ii) For rule amendments, only the section or subsection of the rule being amended need be printed.

(iii) If the executive director or the executive director's designee determines that the rule is too long to publish, the office shall publish the rule analysis and shall publish the rule by reference to a copy on file with the office.

(5) Before filing a rule with the office, the agency shall conduct a thorough analysis, consistent with the criteria established by the Governor's Office of Management and Budget, of the fiscal impact a rule may have on businesses, which criteria may include:

- (a) the type of industries that will be impacted by the rule, and for each identified industry, an estimate of the total number of businesses within the industry, and an estimate of the number of those businesses that are small businesses;
- (b) the individual fiscal impact that would incur to a typical business for a one-year period;
- (c) the aggregated total fiscal impact that would incur to all businesses within the state for a one-year period;
- (d) the total cost that would incur to all impacted entities over a five-year period; and
- (e) the department head's comments on the analysis.

(6) If the agency reasonably expects that a proposed rule will have a measurable negative fiscal impact on small businesses, the agency shall consider, as allowed by federal law, each of the following methods of reducing the impact of the rule on small businesses:

- (a) establishing less stringent compliance or reporting requirements for small businesses;
- (b) establishing less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
- (c) consolidating or simplifying compliance or reporting requirements for small businesses;
- (d) establishing performance standards for small businesses to replace design or operational standards required in the proposed rule; and
- (e) exempting small businesses from all or any part of the requirements contained in the proposed rule.

(7) If during the public comment period an agency receives comment that the proposed rule will cost small business more than one day's annual average gross receipts, and the agency had not previously performed the analysis in Subsection (6), the agency shall perform the analysis described in Subsection (6).

(8) The rule analysis shall contain:

- (a) a summary of the rule or change;
- (b) the purpose of the rule or reason for the change;
- (c) the statutory authority or federal requirement for the rule;
- (d) the anticipated cost or savings to:
 - (i) the state budget;
 - (ii) local governments;
 - (iii) small businesses; and
- (iv) persons other than small businesses, businesses, or local governmental entities;
- (e) the compliance cost for affected persons;
- (f) how interested persons may review the full text of the rule;
- (g) how interested persons may present their views on the rule;
- (h) the time and place of any scheduled public hearing;
- (i) the name and telephone number of an agency employee who may be contacted about the rule;
- (j) the name of the agency head or designee who authorized the rule;
- (k) the date on which the rule may become effective following the public comment period;
- (l) the agency's analysis on the fiscal impact of the rule as required under Subsection (5);
- (m) any additional comments the department head may choose to submit regarding the fiscal impact the rule may have on businesses; and

(n) if applicable, a summary of the agency's efforts to comply with the requirements of Subsection (6).

(9)

(a) For a rule being repealed and reenacted, the rule analysis shall contain a summary that generally includes the following:

(i) a summary of substantive provisions in the repealed rule which are eliminated from the enacted rule; and

(ii) a summary of new substantive provisions appearing only in the enacted rule.

(b) The summary required under this Subsection (9) is to aid in review and may not be used to contest any rule on the ground of noncompliance with the procedural requirements of this chapter.

(10) A copy of the rule analysis shall be mailed to all persons who have made timely request of the agency for advance notice of its rulemaking proceedings and to any other person who, by statutory or federal mandate or in the judgment of the agency, should also receive notice.

(11)

(a) Following the publication date, the agency shall allow at least 30 days for public comment on the rule.

(b) The agency shall review and evaluate all public comments submitted in writing within the time period under Subsection (11)(a) or presented at public hearings conducted by the agency within the time period under Subsection (11)(a).

(12)

(a) Except as provided in Sections 63G-3-303 and 63G-3-304, a proposed rule becomes effective on any date specified by the agency that is no fewer than seven calendar days after the close of the public comment period under Subsection (11), nor more than 120 days after the publication date.

(b) The agency shall provide notice of the rule's effective date to the office in the form required by the department.

(c) The notice of effective date may not provide for an effective date prior to the date it is received by the office.

(d) The office shall publish notice of the effective date of the rule in the next issue of the bulletin.

(e) A proposed rule lapses if a notice of effective date or a change to a proposed rule is not filed with the office within 120 days of publication.

(13)

(a) As used in this Subsection (13), "initiate rulemaking proceedings" means the filing, for the purposes of publication in accordance with Subsection (4), of an agency's proposed rule that is required by state statute.

(b) A state agency shall initiate rulemaking proceedings no later than 180 days after the effective date of the statutory provision that specifically requires the rulemaking, except under Subsection (13)(c).

(c) When a statute is enacted that requires agency rulemaking and the affected agency already has rules in place that meet the statutory requirement, the agency shall submit the rules to the Administrative Rules Review Committee for review within 60 days after the statute requiring the rulemaking takes effect.

(d) If a state agency does not initiate rulemaking proceedings in accordance with the time requirements in Subsection (13)(b), the state agency shall appear before the legislative

Administrative Rules Review Committee and provide the reasons for the delay.

Amended by Chapter 255, 2017 General Session

63G-3-302 Public hearings.

- (1) Each agency may hold a public hearing on a proposed rule, amendment to a rule, or repeal of a rule during the public comment period.
- (2) Each agency shall hold a public hearing on a proposed rule, amendment to a rule, or repeal of a rule if:
 - (a) a public hearing is required by state or federal mandate;
 - (b)
 - (i) another state agency, 10 interested persons, or an interested association having not fewer than 10 members request a public hearing; and
 - (ii) the agency receives the request in writing not more than 15 days after the publication date of the proposed rule.
- (3) The agency shall hold the hearing:
 - (a) before the rule becomes effective; and
 - (b) no less than seven days nor more than 30 days after receipt of the request for hearing.

Renumbered and Amended by Chapter 382, 2008 General Session

63G-3-303 Changes in rules.

- (1)
 - (a) To change a proposed rule already published in the bulletin, an agency shall file with the office:
 - (i) the text of the changed rule; and
 - (ii) a rule analysis containing a description of the change and the information required by Section 63G-3-301.
 - (b) A change to a proposed rule may not be filed more than 120 days after publication of the rule being changed.
 - (c) The office shall publish the rule analysis for the changed rule in the bulletin.
 - (d) The changed proposed rule and its associated proposed rule will become effective on a date specified by the agency, not less than 30 days or more than 120 days after publication of the last change in proposed rule.
 - (e) A changed proposed rule and its associated proposed rule lapse if a notice of effective date or another change to a proposed rule is not filed with the office within 120 days of publication of the last change in proposed rule.
- (2) If the rule change is nonsubstantive:
 - (a) the agency need not comply with the requirements of Subsection (1); and
 - (b) the agency shall notify the office of the change in writing.
- (3) If the rule is effective, the agency shall amend the rule according to the procedures specified in Section 63G-3-301.

Amended by Chapter 193, 2016 General Session

63G-3-304 Emergency rulemaking procedure.

- (1) All agencies shall comply with the rulemaking procedures of Section 63G-3-301 unless an agency finds that these procedures would:
- (a) cause an imminent peril to the public health, safety, or welfare;
 - (b) cause an imminent budget reduction because of budget restraints or federal requirements; or
 - (c) place the agency in violation of federal or state law.
- (2)
- (a) When finding that its rule is excepted from regular rulemaking procedures by this section, the agency shall file with the office:
 - (i) the text of the rule; and
 - (ii) a rule analysis that includes the specific reasons and justifications for its findings.
 - (b) The office shall publish the rule in the bulletin as provided in Subsection 63G-3-301(4).
 - (c) The agency shall notify interested persons as provided in Subsection 63G-3-301(10).
 - (d) The rule becomes effective for a period not exceeding 120 days on the date of filing or any later date designated in the rule.
- (3) If the agency intends the rule to be effective beyond 120 days, the agency shall also comply with the procedures of Section 63G-3-301.

Amended by Chapter 193, 2016 General Session

63G-3-305 Agency review of rules -- Schedule of filings -- Limited exemption for certain rules.

- (1) Each agency shall review each of its rules within five years after the rule's original effective date or within five years after the filing of the last five-year review, whichever is later.
- (2) An agency may consider any substantial review of a rule to be a five-year review if the agency also meets the requirements described in Subsection (3).
- (3) At the conclusion of its review, and no later than the deadline described in Subsection (1), the agency shall decide whether to continue, repeal, or amend and continue the rule and comply with Subsections (3)(a) through (c), as applicable.
- (a) If the agency continues the rule, the agency shall file with the office a five-year notice of review and statement of continuation that includes:
 - (i) a concise explanation of the particular statutory provisions under which the rule is enacted and how these provisions authorize or require the rule;
 - (ii) a summary of written comments received during and since the last five-year review of the rule from interested persons supporting or opposing the rule; and
 - (iii) a reasoned justification for continuation of the rule, including reasons why the agency disagrees with comments in opposition to the rule, if any.
 - (b) If the agency repeals the rule, the agency shall:
 - (i) comply with Section 63G-3-301; and
 - (ii) in the rule analysis described in Section 63G-3-301, state that the repeal is the result of the agency's five-year review under this section.
 - (c) If the agency amends and continues the rule, the agency shall comply with the requirements described in Section 63G-3-301 and file with the office the five-year notice of review and statement of continuation required in Subsection (3)(a).
- (4) The office shall publish a five-year notice of review and statement of continuation in the

bulletin no later than one year after the deadline described in Subsection (1).

(5)

(a) The office shall make a reasonable effort to notify an agency that a rule is due for review at least 180 days before the deadline described in Subsection (1).

(b) The office's failure to comply with the requirement described in Subsection (5)(a) does not exempt an agency from complying with any provision of this section.

(6) If an agency finds that it will not meet the deadline established in Subsection (1):

(a) before the deadline described in Subsection (1), the agency may file one extension with the office indicating the reason for the extension; and

(b) the office shall publish notice of the extension in the bulletin in accordance with the office's publication schedule established by rule under Section 63G-3-402.

(7) An extension permits the agency to comply with the requirements described in Subsections (1) and (3) up to 120 days after the deadline described in Subsection (1).

(8)

(a) If an agency does not comply with the requirements described in Subsection (3), and does not file an extension under Subsection (6), the rule expires automatically on the day immediately after the date of the missed deadline.

(b) If an agency files an extension under Subsection (6) and does not comply with the requirements described in Subsection (3) within 120 days after the day on which the deadline described in Subsection (1) expires, the rule expires automatically on the day immediately after the date of the missed deadline.

(9) After a rule expires under Subsection (8), the office shall:

(a) publish a notice in the next issue of the bulletin that the rule has expired and is no longer enforceable;

(b) remove the rule from the code; and

(c) notify the agency that the rule has expired.

(10) After a rule expires, an agency must comply with the requirements of Section 63G-3-301 to reenact the rule.

Amended by Chapter 193, 2016 General Session

Part 4 Office of Administrative Rules

63G-3-401 Office of Administrative Rules created -- Coordinator.

(1) There is created within the Department of Administrative Services the Office of Administrative Rules, to be administered by a coordinator.

(2) The coordinator shall hire, train, and supervise staff necessary for the office to carry out the provisions of this chapter.

Amended by Chapter 193, 2016 General Session

63G-3-402 Office of Administrative Rules -- Duties generally.

(1) The office shall:

(a) record in a register the receipt of all agency rules, rule analysis forms, and notices of

- effective dates;
 - (b) make the register, copies of all proposed rules, and rulemaking documents available for public inspection;
 - (c) publish all proposed rules, rule analyses, notices of effective dates, and review notices in the bulletin at least monthly, except that the office may publish the complete text of any proposed rule that the executive director or the executive director's designee determines is too long to print or too expensive to publish by reference to the text maintained by the office;
 - (d) compile, format, number, and index all effective rules in an administrative code, and periodically publish that code and supplements or revisions to it;
 - (e) publish a digest of all rules and notices contained in the most recent bulletin;
 - (f) publish at least annually an index of all changes to the administrative code and the effective date of each change;
 - (g) print, or contract to print, all rulemaking publications the executive director determines necessary to implement this chapter;
 - (h) distribute without charge the bulletin and administrative code to state-designated repositories, the Administrative Rules Review Committee, the Office of Legislative Research and General Counsel, and the two houses of the Legislature;
 - (i) distribute without charge the digest and index to state legislators, agencies, political subdivisions on request, and the Office of Legislative Research and General Counsel;
 - (j) distribute, at prices covering publication costs, all paper rulemaking publications to all other requesting persons and agencies;
 - (k) provide agencies assistance in rulemaking;
 - (l) if the department operates the office as an internal service fund agency in accordance with Section 63A-1-109.5, submit to the Rate Committee established in Section 63A-1-114:
 - (i) the proposed rate and fee schedule as required by Section 63A-1-114; and
 - (ii) other information or analysis requested by the Rate Committee;
 - (m) administer this chapter and require state agencies to comply with filing, publication, and hearing procedures; and
 - (n) make technological improvements to the rulemaking process, including improvements to automation and digital accessibility.
- (2) The department shall establish by rule in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, all filing, publication, and hearing procedures necessary to make rules under this chapter.
- (3) The office may after notifying the agency make nonsubstantive changes to rules filed with the office or published in the bulletin or code by:
- (a) implementing a uniform system of formatting, punctuation, capitalization, organization, numbering, and wording;
 - (b) correcting obvious errors and inconsistencies in punctuation, capitalization, numbering, referencing, and wording;
 - (c) changing a catchline to more accurately reflect the substance of each section, part, rule, or title;
 - (d) updating or correcting annotations associated with a section, part, rule, or title; and
 - (e) merging or determining priority of any amendment, enactment, or repeal to the same rule or section made effective by an agency.
- (4) In addition, the office may make the following nonsubstantive changes with the concurrence of the agency:

- (a) eliminate duplication within rules;
 - (b) eliminate obsolete and redundant words; and
 - (c) correct defective or inconsistent section and paragraph structure in arrangement of the subject matter of rules.
- (5) For nonsubstantive changes made in accordance with Subsection (3) or (4) after publication of the rule in the bulletin, the office shall publish a list of nonsubstantive changes in the bulletin. For each nonsubstantive change, the list shall include:
- (a) the affected code citation;
 - (b) a brief description of the change; and
 - (c) the date the change was made.
- (6) All funds appropriated or collected for publishing the office's publications shall be nonlapsing.

Amended by Chapter 193, 2016 General Session

63G-3-403 Repeal and reenactment of Utah Administrative Code.

- (1) When the executive director determines that the Utah Administrative Code requires extensive revision and reorganization, the office may repeal the code and reenact a new code according to the requirements of this section.
- (2) The office may:
- (a) reorganize, reformat, and renumber the code;
 - (b) require each agency to review its rules and make any organizational or substantive changes according to the requirements of Section 63G-3-303; and
 - (c) require each agency to prepare a brief summary of all substantive changes made by the agency.
- (3) The office may make nonsubstantive changes in the code by:
- (a) adopting a uniform system of punctuation, capitalization, numbering, and wording;
 - (b) eliminating duplication;
 - (c) correcting defective or inconsistent section and paragraph structure in arrangement of the subject matter of rules;
 - (d) eliminating all obsolete or redundant words;
 - (e) correcting obvious errors and inconsistencies in punctuation, capitalization, numbering, referencing, and wording;
 - (f) changing a catchline to more accurately reflect the substance of each section, part, rule, or title;
 - (g) updating or correcting annotations associated with a section, part, rule, or title; and
 - (h) merging or determining priority of any amendment, enactment, or repeal to the same rule or section made effective by an agency.
- (4)
- (a) To inform the public about the proposed code reenactment, the office shall publish in the bulletin:
 - (i) notice of the code reenactment;
 - (ii) the date, time, and place of a public hearing where members of the public may comment on the proposed reenactment of the code;
 - (iii) locations where the proposed reenactment of the code may be reviewed; and
 - (iv) agency summaries of substantive changes in the reenacted code.

- (b) To inform the public about substantive changes in agency rules contained in the proposed reenactment, each agency shall:
 - (i) make the text of their reenacted rules available:
 - (A) for public review during regular business hours; and
 - (B) in an electronic version; and
 - (ii) comply with the requirements of Subsection 63G-3-301(10).
- (5) The office shall hold a public hearing on the proposed code reenactment no fewer than 30 days nor more than 45 days after the publication required by Subsection (4)(a).
- (6) The office shall distribute complete text of the proposed code reenactment without charge to:
 - (a) state-designated repositories in Utah;
 - (b) the Administrative Rules Review Committee; and
 - (c) the Office of Legislative Research and General Counsel.
- (7) The former code is repealed and the reenacted code is effective at noon on a date designated by the office that is not fewer than 45 days nor more than 90 days after the publication date required by this section.
- (8) Repeal and reenactment of the code meets the requirements of Section 63G-3-305 for a review of all agency rules.

Amended by Chapter 193, 2016 General Session

Part 5 Legislative Oversight

63G-3-501 Administrative Rules Review Committee.

- (1)
 - (a) There is created an Administrative Rules Review Committee of the following 10 permanent members:
 - (i) five members of the Senate appointed by the president of the Senate, no more than three of whom may be from the same political party; and
 - (ii) five members of the House of Representatives appointed by the speaker of the House of Representatives, no more than three of whom may be from the same political party.
 - (b) Each permanent member shall serve:
 - (i) for a two-year term; or
 - (ii) until the permanent member's successor is appointed.
 - (c)
 - (i) A vacancy exists when a permanent member ceases to be a member of the Legislature, or when a permanent member resigns from the committee.
 - (ii) When a vacancy exists:
 - (A) if the departing member is a member of the Senate, the president of the Senate shall appoint a member of the Senate to fill the vacancy; or
 - (B) if the departing member is a member of the House of Representatives, the speaker of the House of Representatives shall appoint a member of the House of Representatives to fill the vacancy.
 - (iii) The newly appointed member shall serve the remainder of the departing member's unexpired term.

- (d)
 - (i) The president of the Senate shall designate a member of the Senate appointed under Subsection (1)(a)(i) as a cochair of the committee.
 - (ii) The speaker of the House of Representatives shall designate a member of the House of Representatives appointed under Subsection (1)(a)(ii) as a cochair of the committee.
- (e) Three representatives and three senators from the permanent members are a quorum for the transaction of business at any meeting.
- (f)
 - (i) Subject to Subsection (1)(f)(ii), the committee shall meet at least once each month to review new agency rules, amendments to existing agency rules, and repeals of existing agency rules.
 - (ii) The committee chairs may suspend the meeting requirement described in Subsection (1)(f)(i) at the committee chairs' discretion.
- (2) The office shall submit a copy of each issue of the bulletin to the committee.
- (3)
 - (a) The committee shall exercise continuous oversight of the rulemaking process.
 - (b) The committee shall examine each rule submitted by an agency to determine:
 - (i) whether the rule is authorized by statute;
 - (ii) whether the rule complies with legislative intent;
 - (iii) the rule's impact on the economy and the government operations of the state and local political subdivisions; and
 - (iv) the rule's impact on affected persons.
 - (c) To carry out these duties, the committee may examine any other issues that the committee considers necessary. The committee may also notify and refer rules to the chairs of the interim committee that has jurisdiction over a particular agency when the committee determines that an issue involved in an agency's rules may be more appropriately addressed by that committee.
 - (d) In reviewing a rule, the committee shall follow generally accepted principles of statutory construction.
- (4) When the committee reviews existing rules, the committee chairs shall invite the Senate and House chairs of the standing committee and of the appropriation subcommittee that have jurisdiction over the agency whose existing rules are being reviewed to participate as nonvoting, ex officio members with the committee.
- (5) The committee may request that the Office of the Legislative Fiscal Analyst prepare a fiscal note on any rule.
- (6) In order to accomplish the committee's functions described in this chapter, the committee has all the powers granted to legislative interim committees under Section 36-12-11.
- (7)
 - (a) The committee may prepare written findings of the committee's review of a rule and may include any recommendations, including legislative action.
 - (b) When the committee reviews a rule, the committee shall provide to the agency that enacted the rule:
 - (i) the committee's findings, if any; and
 - (ii) a request that the agency notify the committee of any changes the agency makes to the rule.
 - (c) The committee shall provide a copy of the committee's findings, if any, to:

- (i) any member of the Legislature, upon request;
 - (ii) any person affected by the rule, upon request;
 - (iii) the president of the Senate;
 - (iv) the speaker of the House of Representatives;
 - (v) the Senate and House chairs of the standing committee that has jurisdiction over the agency that made the rule; and
 - (vi) the Senate and House chairs of the appropriation subcommittee that has jurisdiction over the agency that made the rule.
- (8)
- (a) The committee may submit a report on its review of state agency rules to each member of the Legislature at each regular session.
 - (b) The report shall include:
 - (i) any findings and recommendations the committee made under Subsection (7);
 - (ii) any action an agency took in response to committee recommendations; and
 - (iii) any recommendations by the committee for legislation.

Amended by Chapter 193, 2016 General Session

63G-3-502 Legislative reauthorization of agency rules -- Extension of rules by governor.

- (1) All grants of rulemaking power from the Legislature to a state agency in any statute are made subject to the provisions of this section.
- (2)
- (a) Except as provided in Subsection (2)(b), every agency rule that is in effect on February 28 of any calendar year expires on May 1 of that year unless it has been reauthorized by the Legislature.
 - (b) Notwithstanding the provisions of Subsection (2)(a), an agency's rules do not expire if:
 - (i) the rule is explicitly mandated by a federal law or regulation; or
 - (ii) a provision of Utah's constitution vests the agency with specific constitutional authority to regulate.
- (3)
- (a) The Administrative Rules Review Committee shall have omnibus legislation prepared for consideration by the Legislature during its annual general session.
 - (b) The omnibus legislation shall be substantially in the following form: "All rules of Utah state agencies are reauthorized except for the following:".
 - (c) Before sending the legislation to the governor for the governor's action, the Administrative Rules Review Committee may send a letter to the governor and to the agency explaining specifically why the committee believes any rule should not be reauthorized.
 - (d) For the purpose of this section, the entire rule, a single section, or any complete paragraph of a rule may be excepted for reauthorization in the omnibus legislation considered by the Legislature.
- (4) The Legislature's reauthorization of a rule by legislation does not constitute legislative approval of the rule, nor is it admissible in any proceeding as evidence of legislative intent.
- (5)
- (a) If an agency believes that a rule that has not been reauthorized by the Legislature or that will be allowed to expire should continue in full force and effect and is a rule within their authorized rulemaking power, the agency may seek the governor's declaration extending the

rule beyond the expiration date.

(b) In seeking the extension, the agency shall submit a petition to the governor that affirmatively states:

- (i) that the rule is necessary; and
- (ii) a citation to the source of its authority to make the rule.

(c)

(i) If the governor finds that the necessity does exist, and that the agency has the authority to make the rule, the governor may declare the rule to be extended by publishing that declaration in the Administrative Rules Bulletin on or before April 15 of that year.

(ii) The declaration shall set forth the rule to be extended, the reasons the extension is necessary, and a citation to the source of the agency's authority to make the rule.

(d) If the omnibus bill required by Subsection (3) fails to pass both houses of the Legislature or is found to have a technical legal defect preventing reauthorization of administrative rules intended to be reauthorized by the Legislature, the governor may declare all rules to be extended by publishing a single declaration in the Administrative Rules Bulletin on or before June 15 without meeting requirements of Subsections (5)(b) and (c).

Renumbered and Amended by Chapter 382, 2008 General Session

Part 6 Judicial Review

63G-3-601 Interested parties -- Petition for agency action.

(1) As used in this section, "initiate rulemaking proceedings" means the filing, for the purposes of publication in accordance with Subsection 63G-3-301(4), of an agency's proposed rule to implement a petition for the making, amendment, or repeal of a rule as provided in this section.

(2) An interested person may petition an agency to request the making, amendment, or repeal of a rule.

(3) The department shall prescribe by rule the form for petitions and the procedure for their submission, consideration, and disposition.

(4) A statement shall accompany the proposed rule, or proposed amendment or repeal of a rule, demonstrating that the proposed action is within the jurisdiction of the agency and appropriate to the powers of the agency.

(5) Within 60 days after submission of a petition, the agency shall either deny the petition in writing, stating its reasons for the denial, or initiate rulemaking proceedings.

(6)

(a) If the petition is submitted to a board that has been granted rulemaking authority by the Legislature, the board shall, within 45 days of the submission of the petition, place the petition on its agenda for review.

(b) Within 80 days of the submission of the petition, the board shall either:

- (i) deny the petition in writing stating its reasons for denial; or
- (ii) initiate rulemaking proceedings.

(7) If the agency or board has not provided the petitioner written notice that the agency has denied the petition or initiated rulemaking proceedings within the time limitations specified in Subsection (5) or (6) respectively, the petitioner may seek a writ of mandamus in state district

court.

Amended by Chapter 181, 2017 General Session

63G-3-602 Judicial challenge to administrative rules.

(1)

(a) Any person aggrieved by a rule may obtain judicial review of the rule by filing a complaint with the county clerk in the district court where the person resides or in the district court in Salt Lake County.

(b) Any person aggrieved by an agency's failure to comply with Section 63G-3-201 may obtain judicial review of the agency's failure to comply by filing a complaint with the clerk of the district court where the person resides or in the district court in Salt Lake County.

(2)

(a) Except as provided in Subsection (2)(b), a person seeking judicial review under this section shall exhaust that person's administrative remedies by complying with the requirements of Section 63G-3-601 before filing the complaint.

(b) When seeking judicial review of a rule, the person need not exhaust that person's administrative remedies if:

(i) less than six months has passed since the date that the rule became effective and the person had submitted verbal or written comments on the rule to the agency during the public comment period;

(ii) a statute granting rulemaking authority expressly exempts rules made under authority of that statute from compliance with Section 63G-3-601; or

(iii) compliance with Section 63G-3-601 would cause the person irreparable harm.

(3)

(a) In addition to the information required by the Utah Rules of Civil Procedure, a complaint filed under this section shall contain:

(i) the name and mailing address of the plaintiff;

(ii) the name and mailing address of the defendant agency;

(iii) the name and mailing address of any other party joined in the action as a defendant;

(iv) the text of the rule or proposed rule, if any;

(v) an allegation that the person filing the complaint has either exhausted the administrative remedies by complying with Section 63G-3-601 or met the requirements for waiver of exhaustion of administrative remedies established by Subsection (2)(b);

(vi) the relief sought; and

(vii) factual and legal allegations supporting the relief sought.

(b)

(i) The plaintiff shall serve a summons and a copy of the complaint as required by the Utah Rules of Civil Procedure.

(ii) The defendants shall file a responsive pleading as required by the Utah Rules of Civil Procedures.

(iii) The agency shall file the administrative record of the rule, if any, with its responsive pleading.

(4) The district court may grant relief to the petitioner by:

(a) declaring the rule invalid, if the court finds that:

(i) the rule violates constitutional or statutory law or the agency does not have legal

- authority to make the rule;
 - (ii) the rule is not supported by substantial evidence when viewed in light of the whole administrative record; or
 - (iii) the agency did not follow proper rulemaking procedure;
 - (b) declaring the rule nonapplicable to the petitioner;
 - (c) remanding the matter to the agency for compliance with proper rulemaking procedures or further fact-finding;
 - (d) ordering the agency to comply with Section 63G-3-201;
 - (e) issuing a judicial stay or injunction to enjoin the agency from illegal action or action that would cause irreparable harm to the petitioner; or
 - (f) any combination of Subsections (4)(a) through (e).
- (5) If the plaintiff meets the requirements of Subsection (2)(b), the district court may review and act on a complaint under this section whether or not the plaintiff has requested the agency review under Section 63G-3-601.

Renumbered and Amended by Chapter 382, 2008 General Session

63G-3-603 Time for contesting a rule -- Statute of limitations.

- (1) A proceeding to contest any rule on the ground of noncompliance with the procedural requirements of this chapter shall commence within two years of the effective date of the rule.
- (2) A proceeding to contest any rule on the ground of not being supported by substantial evidence when viewed in light of the whole administrative record shall commence within four years of the effective date of the challenged action.
- (3) A proceeding to contest any rule on the basis that a change to the rule made under Subsection 63G-3-402(2) or (3) substantively changed the rule shall be commenced within two years of the date the change was made.

Renumbered and Amended by Chapter 382, 2008 General Session

Part 7

Official Compilation of Administrative Rules

63G-3-701 Utah Administrative Code as official compilation of rules -- Judicial notice.

The code shall be received by all the judges, public officers, commissions, and departments of the state government as evidence of the administrative law of the state of Utah and as an authorized compilation of the administrative law of Utah. All courts shall take judicial notice of the code and its provisions.

Renumbered and Amended by Chapter 382, 2008 General Session

63G-3-702 Utah Administrative Code -- Organization -- Official compilation.

- (1) The Utah Administrative Code shall be divided into three parts:
 - (a) titles, whose number shall begin with "R";
 - (b) rules; and

(c) sections.

(2) All sections contained in the code are referenced by a three-part number indicating its location in the code.

(3) The office shall maintain the official compilation of the code and is the state-designated repository for administrative rules. If a dispute arises in which there is more than one version of a rule, the latest effective version on file with the office is considered the correct, current version.

Amended by Chapter 193, 2016 General Session

R15. Administrative Services, Administrative Rules (Office of).**R15-1. Administrative Rule Hearings.****R15-1-1. Authority.**

- (1) This rule establishes procedures and standards for administrative rule hearings as required by Subsection 63G-3-402(1)(a).
- (2) The procedures of this rule constitute the minimum requirements for mandatory administrative rule hearings. Additional procedures may be required to comply with any other governing statute, federal law, or federal regulation.

R15-1-2. Definitions.

- (1) Terms used in this rule are defined in Section 63G-3-102.
- (2) In addition:
 - (a) "coordinator" means the coordinator of the Office of Administrative Rules;
 - (b) "hearing" means an administrative rule hearing; and
 - (c) "officer" means an administrative rule hearing officer.

R15-1-3. Purpose.

- (1) The purpose of this rule is to provide:
 - (a) procedures for agency hearings on proposed administrative rules or rules changes, or on the need for a rule or change;
 - (b) opportunity for public comment on rules; and
 - (c) opportunity for agency response to public concerns about rules.

R15-1-4. When Agencies Hold Hearings.

- (1) Agencies shall hold hearings as required by Subsection 63G-3-302(2).
- (2) Agencies may hold hearings:
 - (a) during the public comment period on a proposed rule, after its publication in the bulletin and prior to its effective date;
 - (b) before initiating rulemaking procedures under Title 63G, Chapter 3, to promote public input prior to a rule's publication;
 - (c) during a regular or extraordinary meeting of a state board, council, or commission, in order to avoid separate and additional meetings; or
 - (d) to hear any public petition for a rule change as provided by Section 63G-3-601.
- (3) Voluntary hearings, as described in this section, follow the procedures prescribed by this rule or any other procedures the agency may provide by rule.
- (4) Mandatory hearings, as described in this section, follow the procedures prescribed by this rule and any additional requirements of state or federal law.

(5) If an agency holds a mandatory hearing under the procedures of this rule during the public comment period described in Subsection 63G-3-301(6), no second hearing is required for the purpose of comment on the same rule or change considered at the first hearing.

R15-1-5. Hearing Procedures.

(1) Notice.

(a) An agency shall provide notice of a hearing by:

- (i) publishing the hearing date, time, place, and subject in the bulletin;
- (ii) mailing copies of the notice directly to persons who have petitioned for a hearing or rule changes under Section 63G-3-302 or 63G-3-601, respectively; and
- (iii) posting for at least 24 hours in a place in the agency's offices which is frequented by the public.

(b) If a hearing becomes mandatory after the agency has published the proposed rule in the bulletin, the agency shall notify in writing persons requesting the hearing of the time and place.

(c) An agency may provide additional notice of a hearing, and shall give further notice as may otherwise be required by law.

(2) Hearing Officer.

(a) The agency head shall appoint as hearing officer a person qualified to conduct fairly the hearing.

(b) No restrictions apply to this appointment except the officer shall know rulemaking procedure.

(c) If a state board, council, or commission is responsible for agency rulemaking, and holds a hearing, a member or the body's designee may be the hearing officer.

(3) Time. The officer shall open the hearing at the announced time and place and permit comment for a minimum of one hour. The hearing may be extended or continued to another day as necessary in the judgment of the officer.

(4) Comment.

(a) At the opening of the hearing, the officer shall explain the subject and purpose of the hearing and invite orderly, germane comment from all persons in attendance. The officer may set time limits for speakers and shall ensure equitable use of time.

(b) The agency shall have a representative at the hearing, other than the officer, who is familiar with the rule at issue and who can respond to requests for information by those in attendance.

(c) The officer shall invite written comment to be submitted at the hearing or after the hearing, within a reasonable time. Written comment shall be attached to the hearing minutes.

(d) The officer shall conduct the hearing as an open, informal, orderly, and informative meeting. Oaths, cross-examination, and rules of evidence are not required.

(5) The Hearing Record.

- (a) The officer shall cause to be recorded the name, address, and relevant affiliation of all persons speaking at the hearing, and cause an electronic or mechanical verbatim recording of the hearing to be made, or make a brief summary, of their remarks.
- (b) The hearing record consists of a copy of the proposed rule or rule change, submitted written comment, the hearing recording or summary, the list of persons speaking at the hearing, and other pertinent documents as determined by the agency.
- (c) The hearing officer shall, as soon as practicable, assemble the hearing record and transmit it to the agency for consideration.
- (d) The hearing record shall be kept with and as part of the rule's administrative record in a file available at the agency offices for public inspection.

R15-1-8. Decision on an Issue Regarding Rulemaking Procedure.

- (1) When a hearing issue requires a decision regarding rulemaking procedure, the officer shall submit a written request for a decision to the coordinator as soon as practicable after, or after recessing, the hearing, as provided in Section R15-5-6. The coordinator shall reply to the agency head as provided in Subsection R15-5-6(2). The coordinator's decision shall be included in the hearing record.

R15-1-9. Appeal and Judicial Review.

- (1) Persons may appeal the decision of the agency head or the coordinator by petitioning the district court for judicial review as provided by law.

KEY: administrative law, government hearings

Date of Enactment or Last Substantive Amendment: June 1, 1996

Notice of Continuation: September 11, 2015

Authorizing, and Implemented or Interpreted Law: 63G-3-402

R15. Administrative Services, Administrative Rules (Office of).**R15-2. Public Petitioning for Rulemaking.****R15-2-1. Authority.**

As required by Subsection 63G-3-601(3), this rule prescribes the form and procedures for submission, consideration, and disposition of petitions requesting the making, amendment, or repeal of an administrative rule.

R15-2-2. Definitions.

- (1) Terms used in this rule are defined in Section 63G-3-102.
- (2) Other terms are defined as follows:
 - (a) "rule change" means:
 - (i) making a new rule;
 - (ii) amending, repealing, or repealing and reenacting an existing rule;
 - (iii) amending a proposed rule further by filing a change in proposed rule under the provisions of Section 63G-3-303;
 - (iv) allowing a proposed (new, amended, repealed, or repealed and reenacted) rule or change in proposed rule to lapse; or
 - (v) any combination of the above.
 - (b) "petitioner" means an interested person who submits a petition to an agency pursuant to Section 63G-3-601 and this rule.

R15-2-3. Petition Procedure.

- (1) The petitioner shall send the petition to the head of the agency authorized by law to make the rule change requested.
- (2) The agency receiving the petition shall record the date it received the petition.

R15-2-4. Petition Form.

The petition shall:

- (a) be clearly designated "petition for a rule change";
- (b) state the petitioner's name;
- (c) state the petitioner's interest in the rule, including relevant affiliation, if any;
- (d) include a statement as required by Subsection 63G-3-601(4) regarding the requested rule change;
- (e) state the approximate wording of the requested rule change;
- (f) describe the reason for the rule change;

- (g) include an address, an e-mail address when available, and telephone where the petitioner can be reached during regular business hours; and
- (h) be signed by the petitioner.

R15-2-5. Petition Consideration and Disposition.

- (1) The agency head or designee shall:
 - (a) review and consider the petition;
 - (b) write a response to the petition stating:
 - (i) that the petition is denied and reasons for denial; or
 - (ii) the date when the agency is initiating a rule change consistent with the intent of the petition; and
 - (c) send the response to the petitioner within the time frame provided by Section 63G-3-601.
- (2) The petitioned agency may, within the time frame provided by Section 63G-3-601, interview the petitioner, hold a public hearing on the petition, or take any action the agency, in its judgment, deems necessary to provide the petition due consideration.
- (3) The agency shall retain the petition and a copy of the agency's response as part of the administrative record.
- (4) The agency shall mail copies of its decision to all persons who petitioned for a rule change.

KEY: administrative law, open government, transparency

Date of Enactment or Last Substantive Amendment: December 25, 2006

Notice of Continuation: September 11, 2015

Authorizing, and Implemented or Interpreted Law: 63G-3-601

R15. Administrative Services, Administrative Rules (Office of).
R15-3. Administrative Rules: Scope, Content, and When Required,

R15-3-1. Authority, Purpose, and Definitions.

- (1) This rule is authorized under Subsection 63G-3-402(1) and (2).
- (2) This rule clarifies when rulemaking is required, and requirements for incorporation by reference within rules.
- (3) Terms used in this rule are defined in Section 63G-3-102.

R15-3-2. Agency Discretion.

- (1) A rule may restrict agency discretion to prevent agency personnel from exceeding their scope of employment, or committing arbitrary action or application of standards, or to provide due process for persons affected by agency actions.
- (2) A rule may authorize agency discretion that sets limits, standards, and scope of employment within which a range of actions may be applied by agency personnel. A rule may also establish criteria for granting exceptions to the standards or procedures of the rule when, in the judgment of authorized personnel, documented circumstances warrant.
- (3) An agency may have written policies which broadly prescribe goals and guidelines. Policies are not rules unless they meet the criteria for rules set forth under Section 63G-3-201(2).
- (4) Within the limits prescribed by Sections 63G-3-201 and 63G-3-602, an agency has full discretion regarding the substantive content of its rules. The office has authority over nonsubstantive content under Subsections 63G-3-402(3) and (4), and 63G-3-403(2) and (3), rulemaking procedures, and the physical format of rules for compilation in the Utah Administrative Code.

R15-3-3. Use of Incorporation by Reference in Rules.

- (1) An agency incorporating materials by reference as permitted under Subsection 63G-3-201(7) shall comply with the following standards:
 - (a) The rule shall state specifically that the cited material is "incorporated by reference."
 - (b) If the material contains options, or is modified in its application, the options selected and modifications made shall be stated in the rule.
 - (c) If the incorporated material is substantively changed at a later time, and the agency intends to enforce the revised material, the agency shall amend its rule through rulemaking procedures to incorporate by reference any applicable changes as soon as practicable.

- (d) In accordance with Subsection 63G-3-201(7)(c), an agency shall describe substantive changes that appear in the materials incorporated by reference as part of the "summary of rule or change" in the rule analysis.
- (2) An agency shall comply with copyright requirements when providing the office a copy of material incorporated by reference.

R15-3-4. Computer-Prohibited Material.

- (1) All rules shall be in a format that permits their compatibility with the office's computer system and compilation into the Utah Administrative Code.
- (2) Rules may not contain maps, charts, graphs, diagrams, illustrations, forms, or similar material.
- (3) The office shall issue and provide to agencies instructions and standards for formatting rules.

R15-3-5. Statutory Provisions that Require Rulemaking Pursuant to Subsection 63G-3-301(13).

For the purposes of Subsection 63G-3-301(13), the phrase "statutory provision that requires the rulemaking" means a state statutory provision that explicitly mandates rulemaking.

KEY: administrative law

Date of Enactment or Last Substantive Amendment: April 30, 2007

Notice of Continuation: September 11, 2015

Authorizing, and Implemented or Interpreted Law: 63G-3-201; 63G-3-301; 63G-3-402

R15. Administrative Services, Administrative Rules (Office of).

R15-4. Administrative Rulemaking Procedures.

R15-4-1. Authority and Purpose.

- (1) This rule establishes procedures for filing and publication of agency rules under Sections 63G-3-301, 63G-3-303, and 63G-3-304, as authorized under Subsection 63G-3-402(2).
- (2) The procedures of this rule constitute minimum requirements for rule filing and publication. Other governing statutes, federal laws, or federal regulations may require additional rule filing and publication procedures.

R15-4-2. Definitions.

- (1) Terms used in this rule are defined in Section 63G-3-102.
- (2) Other terms are defined as follows:
 - (a) "Anniversary date" means the date that is five years from the original effective date of the rule, or the date that is five years from the date the agency filed with the office the most recent five-year review required under Subsection 63G-3-305(3), whichever is sooner.
 - (b) "Digest" means the Utah State Digest that summarizes the content of the bulletin as required by Subsection 63G-3-402(1)(e);
 - (c) "Codify" means the process of collecting and arranging administrative rules systematically in the Utah Administrative Code, and includes the process of verifying that each amendment was marked as required under Subsection 63G-3-301(4)(b);
 - (d) "Compliance cost" means expenditures a regulated person will incur if a rule or change is made effective;
 - (e) "coordinator" means the coordinator of the Office of Administrative Rules;
 - (f) "Cost" means the aggregated expenses persons as a class affected by a rule will incur if a rule or change is made effective;
 - (g) "eRules" means the administrative rule filing application that agencies use to file rules and notices;
 - (h) "Savings" means:
 - (i) an aggregated monetary amount that will no longer be incurred by persons as a class if a rule or change is made effective;
 - (ii) an aggregated monetary amount that will be refunded or rebated if a rule or change is made effective;

- (iii) an aggregated monetary amount of anticipated revenues to be generated for state budgets, local governments, or both if a rule or change is made effective; or
- (iv) any combination of these aggregated monetary amounts.
- (i) "Unmarked change" means a change made to rule text that was not marked as required by Subsection 63G-3-301(4)(b).

R15-4-3. Publication Dates and Deadlines.

- (1) For the purposes of Subsections 63G-3-301(4) and 63G-3-303(1), an agency shall file its rule and rule analysis by 11:59:59 p.m. on the fifteenth day of the month for publication in the bulletin and digest issued on the first of the next month, and by 11:59:59 p.m. on the first day of the month for publication on the fifteenth of the same month.
 - (a) If the first or fifteenth day is a Saturday, or a Tuesday, Wednesday, Thursday, or Friday holiday, the agency shall file the rule and rule analysis by 11:59:59 p.m. on the previous regular business day.
 - (b) If the first or fifteenth day is a Sunday or Monday holiday, the agency shall file the rule and rule analysis by 11:59:59 p.m. on the next regular business day.
- (2) For all purposes, the official date of publication for the bulletin and digest shall be the first and fifteenth days of each month.

R15-4-4. Thirty-Day Comment Period for a Proposed Rule and a Change in Proposed Rule.

- (1) For the purposes of Sections 63G-3-301 and 63G-3-303, "30 days" shall be computed by:
 - (a) counting the day after publication of the rule as the first day; and
 - (b) counting the thirtieth consecutive day after the day of publication as the thirtieth day, unless
 - (c) the thirtieth consecutive day is a Saturday, Sunday, or holiday, in which event the thirtieth day is the next regular business day.

R15-4-5a. Notice of the Effective Date for a Proposed Rule.

- (1)(a) Pursuant to Subsection 63G-3-301(12), upon expiration of the comment period designated on the rule analysis and filed with the rule, and before expiration of 120 days after publication of a proposed rule, the agency proposing the rule shall notify the office of the date the rule is to become effective and enforceable.
 - (b) The agency shall notify the office after determining that the proposed rule, in the form published, shall be the final form of the rule, and after informing the office of any nonsubstantive changes in the rule as provided for in Section R15-4-6.
- (2)(a) The agency shall notify the office by filing with the office a Notice of Effective Date form using eRules.

(b) If the eRules Notice of Effective Date form is unavailable to the agency, the agency may notify the office by any other form of written communication clearly identifying the proposed rule, stating the date the rule was filed with the office or published in the bulletin, and stating its effective date.

(3) The date designated as the effective date shall be:

- (a) at least seven days after the comment period specified on the rule analysis; or
- (b) if the agency formally extends the comment period for a proposed rule by publishing a subsequent notice in an issue of the bulletin, at least seven days after the extended comment period.

(4) The office shall publish notice of the effective date in the next issue of the bulletin. There is no publication deadline for a notice of effective date for a proposed rule, nor requirement that it be published prior to the effective date.

R15-4-5b. Notice of the Effective Date for a Change in Proposed Rule.

(1)(a) Upon expiration of the 30-day period required by Section 63G-3-303, and before expiration of the 120th day after publication of a change in proposed rule, the agency promulgating the rule shall notify the office of the date the rule is to become effective and enforceable.

(b) The agency shall notify the office after determining that the rule text as published is the final form of the rule, and after informing the office of any nonsubstantive changes in the rule as provided for in Section R15-4-6.

(2)(a) The agency shall notify the office by filing with the office a Notice of Effective Date form using eRules.

(b) If the eRules Notice of Effective Date form is unavailable to the agency, the agency may notify the office by any other form of written communication clearly identifying the change in proposed rule and any rules upon which the change in proposed rule is dependent, stating the date the rules were filed with the office or published in the bulletin, and stating the effective date.

(3) The date designated as the effective date shall be:

- (a) at least 30 days after the publication date of the rule in the bulletin, or
- (b) if the agency designated a comment period, at least seven days after a comment period designated by the agency on the rule analysis or formally extended by publication of a subsequent notice in the bulletin.

(4) The office shall publish notice of the effective date in the next issue of the bulletin. There is no publication deadline for the notice of effective date for a change in proposed rule, nor requirement that it be published prior to the effective date.

R15-4-6. Nonsubstantive Changes in Rules.

- (1) Pursuant to Subsections 63G-3-201(4)(d) and 63G-3-303(2), for the purpose of making rule changes that are grammatical or do not materially affect the application or outcome of agency procedures and standards, agencies shall comply with the procedures of this section.
- (2) The agency proposing a change shall determine if the change is substantive or nonsubstantive according to the criteria cited in Subsection R15-4-6(1).
 - (a) The agency may seek the advice of the attorney general or the office, but the agency is responsible for compliance with the cited criteria.
- (3) Without complying with regular rulemaking procedures, an agency may make nonsubstantive changes in:
 - (a) proposed rules already published in the bulletin and digest but not made effective; or
 - (b) rules already effective.
- (4) To make a nonsubstantive change in a rule, the agency shall:
 - (a) notify the office by filing with the office the form designated for nonsubstantive changes;
 - (b) include with the notice the rule text to be changed, with changes marked as required by Section R15-4-9; and
 - (c) include with the notice the name of the agency head or designee authorizing the change.
- (5) A nonsubstantive change becomes effective on the date the office makes the change in the Utah Administrative Code.
- (6) The office shall record the nonsubstantive change and its effective date in the administrative rules register.

R15-4-7. Substantive Changes in Proposed Rules.

- (1) Pursuant to Section 63G-3-303, agencies shall comply with the procedures of this section when making a substantive change in a proposed rule.
 - (a) The procedures of this section apply if:
 - (i) the agency determines a change in the rule is necessary;
 - (ii) the change is substantive under the criteria of Subsection 63G-3-102(20);
 - (iii) the rule was published as a proposal in the bulletin and digest; and
 - (iv) the rule has not been made effective under the procedures of Subsection 63G-3-301(12) and Section R15-4-5a.
 - (b) If the rule is already effective, the agency shall comply with regular rulemaking procedures.
- (2) To make a substantive change in a proposed rule, the agency shall file with the office:
 - (a) a rule analysis, marked to indicate the agency intends to change a rule already published, and describing the change and reasons for it; and
 - (b) a copy of the proposed rule previously published in the bulletin marked to show only those changes made since the proposed rule was previously published.
- (3) The office shall publish the rule analysis in the next issue of the bulletin, subject to the publication deadlines of Section R15-4-3. The office may also publish the changed text of the rule.

(4) The agency may make a change in proposed rule effective by following the requirements of Section R15-4-5b, or may further amend the rule by following the procedures of Sections R15-4-6 or R15-4-7.

R15-4-8. Temporary 120-Day Rules.

- (1) Pursuant to Section 63G-3-304, for the purpose of filing a temporary rule, an agency shall comply with the procedures of this section.
- (2) The agency proposing a temporary rule shall determine if the need for the rule complies with the criteria of Subsection 63G-3-304(1).
 - (a) The office interprets the criteria of Subsection 63G-3-304(1) to include under "welfare" any substantial material loss to the classes of persons or agencies the agency is mandated to regulate, serve, or protect.
- (3) The agency shall use the same procedures for filing and publishing a temporary rule as for a permanent rule, except:
 - (a) the rule shall become effective and enforceable on the day and hour it is recorded by the office unless the agency designates a later effective date on the rule analysis;
 - (b) no comment period is necessary;
 - (c) no public hearing is necessary; and
 - (d) the rule shall expire 120 days after the rule's effective date unless the filing agency notifies the office, on the form or by memorandum, of an earlier expiration date.
- (4) A temporary rule is separate and distinct from a rule filed under regular rulemaking procedures, though the language of the two rules may be identical. To make a temporary rule permanent, the agency shall propose a separate rule for regular rulemaking.
- (5) When a temporary rule and a similar regular rule are in effect at the same time, any conflict between the provisions of the two are resolved in favor of the rule with the most recent effective date, unless the agency designates otherwise as part of the rule analysis.
- (6) A temporary rule has the full force and effect of a permanent rule while in effect, but a temporary rule is not codified in the Utah Administrative Code.

R15-4-9. Underscoring and Striking Out.

- (1)(a) Pursuant to Subsection 63G-3-301(4)(b), an agency shall underscore language to be added and strike out language to be deleted in proposed rules.
 - (b) Consistent with Subsection 63G-3-301(4)(b), an agency shall underscore language to be added and strike out language to be deleted in changes in proposed rules, 120-day rules, and nonsubstantive changes.
 - (c) The struck out language shall be surrounded by brackets.
- (2) When an agency proposes to make a new rule or section, the entire proposed text shall be underscored.

- (3)(a) When an agency proposes to repeal a complete rule it shall include as part of the information provided in the rule analysis a brief summary of the deleted language and a brief explanation of why the rule is being repealed.
- (b) The agency shall include with the rule analysis a copy of the text to be deleted in one of the following formats:
 - (i) each page annotated "repealed in its entirety" or
 - (ii) the entire text struck out in its entirety and surrounded by one set of brackets.
- (c) The office shall not publish repealed rules unless space is available within the page limits of the bulletin.
- (4) When an agency fails to mark a change as described in this section, the coordinator may refuse to codify the change. When determining whether or not to codify an unmarked change, the coordinator shall consider:
 - (a) whether the unmarked change is substantive or nonsubstantive; and
 - (b) if the purpose of public notification has been adequately served.
- (5) The coordinator's refusal to codify an unmarked change means that the change is not operative for the purposes of Section 63G-3-701 and that the agency must comply with regular rulemaking procedures to make the change.

R15-4-10. Estimates of Anticipated Cost or Savings, and Compliance Cost.

- (1) Pursuant to Subsections 63G-3-301(8)(d), 63G-3-303(1)(a), 63G-3-304(2), and 53C-1-201(3), when an agency files a proposed rule, change in proposed rule, 120-day (emergency) rule, or expedited rule and provides anticipated cost or savings, and compliance cost information in the rule analysis, the agency shall:
 - (a) estimate the incremental cost or savings and incremental compliance cost associated with the changes proposed by the rule or change;
 - (b) estimate the incremental cost or savings and incremental compliance cost in dollars, except as otherwise provided in Subsections R15-4-10(4) and (5);
 - (c) indicate that the amount is either a cost or a savings; and
 - (d) estimate the incremental cost or savings expected to accrue to "state budgets," "local governments," "small businesses," and "persons other than small businesses, businesses, or local governmental entities" as aggregated cost or savings;
- (2) In addition, an agency may:
 - (a) provide a narrative description of anticipated cost or savings, and compliance cost;
 - (b) compare anticipated cost or savings, and compliance cost figures, for the rule or change to:
 - (i) current budgeted costs associated with the existing rule,
 - (ii) figures reported on a fiscal note attached to a related legislative bill, or
 - (iii) both (i) and (ii).
- (3) If an agency chooses to provide comparison figures, it shall clearly distinguish comparison figures from the anticipated cost or savings, and compliance cost figures.

- (4) If dollar estimates are unknown or not available, or the obtaining thereof would impose a substantial unbudgeted hardship on the agency, the agency may substitute a reasoned narrative description of cost-related actions required by the rule or change, and explain the reason or reasons for the substitution.
- (5) If no cost, savings, or compliance cost is associated with the rule or change, an agency may enter "none," "no impact," or similar words in the rule analysis followed by a written explanation of how the agency estimated that there would be no impact, or how the proposed rule, or changes made to an existing rule does not apply to "state budgets," "local government," "small businesses," "persons other than small businesses, businesses, or local governmental entities," or any combination of these.
- (6) If an agency does not provide an estimate of cost, savings, compliance cost, or a reasoned narrative description of cost information; or a written explanation as part of the rule analysis in compliance with this section, the office may, after making an attempt to obtain the required information, refuse to register and publish the rule or change. If the office refuses to register and publish a rule or change, it shall:
- (a) return the rule or change to the agency with a notice indicating that the office has refused to register and publish the rule or change;
 - (b) identify the reason or reasons why the office refused to register and publish the rule or change; and
 - (c) indicate the filing deadlines for the next issue of the bulletin.

KEY: administrative law

Date of Enactment or Last Substantive Amendment: August 24, 2007

Notice of Continuation: September 11, 2015

Authorizing, and Implemented or Interpreted Law: 63G-3-301; 63G-3-303; 63G-3-304; 63G-3-402

R15. Administrative Services, Administrative Rules (Office of).**R15-5. Administrative Rules Adjudicative Proceedings.****R15-5-1. Purpose.**

- (1) This rule provides the procedures for informal adjudicative proceedings governing:
 - (a) appeal and review of a decision by the office not to publish an agency's proposed rule or rule change or not to register an agency's notice of effective date; and
 - (b) a determination by the office whether an agency rule meets the procedural requirements of Title 63G, Chapter 3, the Utah Administrative Rulemaking Act.
- (2) The informal procedures of this rule apply to all other division actions for which an adjudicative proceeding may be required.

R15-5-2. Authority.

This rule is required by Sections 63G-4-202 and 63G-4-203, and is enacted under the authority of Subsection 63G-3-402(1)(m) and Sections 63G-4-202, 63G-4-203, and 63G-4-503.

R15-5-3. Definitions.

- (1) The terms used in this rule are defined in Section 63G-4-103.
- (2) In addition:
 - (a) "coordinator" means the coordinator of the Office of Administrative Rules; and
 - (b) "digest" means the Utah State Digest which summarizes the content of the bulletin as required under Subsection 63G-3-402(1)(f).

R15-5-4. Refusal to Publish or Register a Rule or Rule Change.

- (1) The office shall not publish a proposed rule or rule change when the office determines the agency has not met the requirements of Title 63G, Chapter 3, or of Rules R15-3 or R15-4.
- (2) The office shall not register an agency's notice of effective date, nor codify the rule or rule change in the Utah Administrative Code, if the agency exceeds the 120-day limit required by Subsection 63G-3-301(6)(a) as interpreted in Section R15-4-5.
- (3) The office shall notify the agency of a refusal to publish or register a rule or rule change, and shall advise and assist the agency in correcting any error or omission, and in re-filing to meet statutory and regulatory criteria.

R15-5-5. Appeal of a Refusal to Publish or Register a Rule or Rule Change.

- (1) An agency may request a review of an office refusal to publish or register a rule or rule change by filing a written petition for review with the coordinator.
- (2) The coordinator shall grant or deny the petition within 20 days, and respond in writing giving the reasons for any denial.
- (3) The agency may appeal the decision of the coordinator by filing a written appeal to the executive director of the Department of Administrative Services within 20 days of receipt of the coordinator's decision. The executive director shall respond within 20 days affirming or reversing the coordinator's decision.

R15-5-6. Determining the Procedural Validity of a Rule.

- (1) A person may contest the procedural validity, or request a determination of whether a rule meets the requirements of Title 63G, Chapter 3, by filing a written petition with the office.
 - (a) The rule at issue may be a proposed rule or an effective rule.
 - (b) The petition must be received by the office within the two-year limit set by Section 63G-3-603.
 - (c) The petition may emanate from a rulemaking hearing as in Section R15-1-8.
 - (d) The petition shall specify the rule or rule change at issue and reasons why the petitioner deems it procedurally flawed or invalid.
 - (e) The petition shall be accompanied by any documents the office should consider in reaching its decision.
 - (f) The petition shall be signed and designate a telephone number where the petitioner can be contacted during regular business hours.
- (2) The office shall respond to the petition in writing within 20 days of its receipt.
 - (a) The office shall research all records pertaining to the rule or rule change at issue.
 - (b) The response of the office shall state whether the rule is procedurally valid or invalid and how the agency may remedy any defect.
- (c) The office shall send a copy of the petition and its response to the pertinent agency.
- (3) The petitioner may request reconsideration of the office's findings by filing a written request for reconsideration with the coordinator.
 - (a) The coordinator may respond to the request in writing.
 - (b) If the petitioner receives no response within 20 days, the request is denied.

R15-5-7. Remedies Resulting from an Adjudicative Proceeding.

- (1) A rule the office determines is procedurally invalid shall be stricken from the Utah Administrative Code and notice of its deletion published in the next issues of the bulletin and digest.
- (2) The office shall notify the pertinent agency and assist the agency in re-filing or otherwise remedying the procedural omission or error in the rule.

(3) A rule the office determines is procedurally valid shall be published and registered promptly.

KEY: administrative procedures, administrative law

Date of Enactment or Last Substantive Amendment: June 1, 1996

Notice of Continuation: September 11, 2015

**Authorizing, and Implemented or Interpreted Law: 63G-3-402; 63G-4-202; 63G-4-203;
63G-4-503**

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Mat Carlile, Environmental Planning Consultant

DATE: June 5, 2019

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend SIP Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability; and Part F, Vehicle Inspection and Maintenance Program, Cache County.

Utah Code Annotated 41-6a-1642 gives authority to each county to design and manage a vehicle inspection and maintenance (I/M) program when it is required to attain and maintain any national ambient air quality standard. Section X incorporates these County programs into the Utah State Implementation Plan. Section X, Part A summarizes I/M requirements that are common among all I/M programs. The other subparts (Parts B through F) contain the requirements for each county's unique I/M program. Section X, Part F is the section unique to Cache County's I/M program. Amendments to Section X, Part A were last adopted by the Board on December 4, 2012, and amendments to Part F were last adopted by the Board on November 6, 2013.

The Division of Air Quality is asking the Board to propose for public comment amendments to Parts A and F of Utah SIP Section X. The amendments to Part A incorporate amendments to Utah Code 41-6a-1642. Additionally, language has been added to clarify that counties must consult with the Division before making any changes to their program. These amendments do not change the overall I/M programs. The amendments to Part F remove the tailpipe emission inspection Two Speed Idle Test (TSI) which is currently required for vehicles older than 1995.

During the public comment period, a backsliding demonstration will be provided for the removal of the TSI. This analysis is required under Section 110(l) of the Clean Air Act (CAA) when removing control measures from the SIP, to ensure that the revision would not interfere with any applicable requirement concerning attainment or any other applicable requirement of the CAA.

Staff worked closely with EPA and the Bear River Health Department to ensure that these amendments accurately reflect the current Cache County I/M program and that they are approvable by the EPA.

Staff Recommendation: Staff recommends the Board propose amended SIP Section X, Parts A and F for public comment.

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4 **UTAH STATE IMPLEMENTATION PLAN**
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Adopted by the Utah Air Quality Board
[~~December 5, 2012~~]

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UTAH STATE IMPLEMENTATION PLAN
SECTION X
VEHICLE INSPECTION AND MAINTENANCE PROGRAM
PART A
GENERAL REQUIREMENTS AND APPLICABILITY

1. General Requirements

Federal I/M Program requirements: Utah was previously required by Section 182 and Section 187 of the Clean Air Act to implement and maintain an Inspection and Maintenance (I/M) program in Davis, Salt Lake, Utah, and Weber counties that met the minimum requirements of 40 code of federal regulation (CFR) Part 51 Subpart S and that was at least as effective as the EPA's Basic Performance Standard as specified in 40 CFR 51.352. The Basic Performance Standard requirement is no longer applicable as the relevant nonattainment areas in Davis, Salt Lake, Utah, and Weber counties have been redesignated to attainment / maintenance for the carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) and the 1-hour ozone NAAQS. Parts A, B, C, D, and E of Section X, together with the referenced appendices, continue to demonstrate compliance with the 40 CFR Part 51 provisions for Inspection and Maintenance Program Requirements for Davis, Salt Lake, Utah, and Weber counties and produce mobile source emission reductions that are sufficient to demonstrate continued maintenance of the applicable CO and 1-hour ozone NAAQS. In addition, the Cache, Davis, Salt Lake, Utah, and Weber counties' I/M programs are also utilized as a control measure to attain and maintain EPA's particulate NAAQS (PM_{2.5} and PM₁₀).

On-Board Diagnostics (OBD) Checks: By January 1, 2002, OBD checks and OBD-related repairs are required as a routine component of Utah I/M programs on model year 1996 and newer light-duty vehicles and light-duty trucks equipped with certified on-board diagnostic systems. The federal performance standard requires repair of malfunctions or system deterioration identified by or affecting OBD systems.

Utah I/M program history and general authority: The legal authority for Utah's I/M programs, Utah Code Annotated Section 41-6-163.6¹, was enacted during the First Special Session of the Utah legislature in 1983. I/M programs were initially implemented by Davis and Salt Lake counties in 1984, by Utah County in 1986, and by Weber County in 1990.

In 1990, the legislature enacted Section 41-6-163.7² that requires that counties with I/M programs use computerized I/M testing equipment, adopt standardized emission standards, and provide for reciprocity. Those requirements were fully implemented by Davis, Salt Lake, and Utah counties on September 1, 1991, and by Weber County on January 1, 1992.

¹ Renumbered and recodified in 2005 at Utah Code Annotated 41-6a-1642

² Renumbered and recodified in 2005 at Utah Code Annotated 41-6a-1643

1
2 Section 41-6-163.6 was again amended by the legislature in 1992 to include vehicles
3 owned and operated by the federal government, federal employees, and students and
4 employees of colleges and universities. The 1992 revision of 41-6-163.6 also established
5 more stringent restrictions for vehicles that qualify for a farm truck exemption.
6

7 Section 41-6-163.6 requires that, if identified as necessary to attain or maintain any
8 NAAQS, a county must create an I/M program that follows the criteria outlined in 41-6-
9 163.6. Once a county enacts regulations or ordinances, amendments to Section 19-2-104
10 in 1992 authorized the Utah Air Quality Board to formally establish those requirements
11 for county I/M programs after obtaining agreement from the affected counties. Section
12 41-6-163.6 was also amended to allow the counties to subject individual motor vehicles
13 to inspection and maintenance at times other than the annual inspection.
14

15 Section 41-6-163.6 was amended in 1994 to authorize implementation of I/M programs
16 stricter than minimum federal requirements in counties where it is necessary to attain or
17 maintain ambient air quality standards. Section 41-6-163.6 requires preference be given
18 to a decentralized program to the extent that a decentralized program will attain and
19 maintain ambient air quality standards and meet federal requirements. It also requires
20 affected counties and the Air Quality Board to give preference to the most cost effective
21 means to achieve and maintain the maximum benefit with regard to air quality standards
22 and to meet federal air quality requirements related to motor vehicles. The legislature
23 indicated preference for a reasonable phase-out period for replacement of air pollution
24 test equipment made obsolete by an I/M program in accordance with applicable federal
25 requirements and if such a phase-out does not otherwise interfere with attainment of
26 ambient air quality standards.
27

28 House Concurrent Resolution No. 9 of the 1994 General Session of the legislature
29 (H.C.R. 9) was a concurrent resolution of the legislature and the governor expressing
30 opposition to the EPA position regarding the implementation of enhanced vehicle
31 inspection and urging the EPA to recognize the benefits of other vehicle inspection
32 program options and to work with the state to develop workable plans for attaining
33 ambient air quality standards and protecting public health.
34

35 In 1995, the legislature amended Section 41-6-163.7 to rescind the requirement for I/M
36 program standardization and reciprocity between counties. While advantageous,
37 standardization and reciprocity between I/M counties is no longer required, and each I/M
38 county is free to develop an I/M program that best meets the respective county's needs.
39

40 In 2002, the Legislature amended Section 41-6-163.7 to allow for inspection every other
41 year for cars that are six years old or newer on January 1 each year. This provision is
42 applicable to the extent allowed under the current state implementation plan for each
43 area.
44

45 In 2005, the Legislature renumbered Section 41-6-163.6 and re-codified it as Section 41-
46 6a-1642. The Legislature also amended Section 41-6a-1642 to allow counties with an

1 I/M program to require college students and employees who park a motor vehicle on
2 college or university campus that is not registered in a county subject to emission
3 inspection to provide proof of compliance with an emission inspection.
4

5 Section 41 6a-1642 was amended in 2008 to provide an exemption for vintage vehicles,
6 which are defined in Section 41-21-1. Section 41 6a-1642 was again amended in 2009 to
7 provide an exemption for custom vehicles, which are defined in Section 41-6a-1507.
8

9 In 2010, the legislature enacted Section 41-1a-1223 that allows counties with an I/M
10 program to impose a local emissions compliance fee of up to three dollars. This same bill
11 amended Section 41-6a-1642 to require I/M counties that impose the fee to use revenues
12 generated from the fee to establish and enforce an emission inspection and maintenance
13 program.
14

15 Section 41-6a-1642 was amended in 2011 to require I/M counties' regulations and
16 ordinances to be compliant with the analyzer design and certification requirements
17 contained in the SIP.
18

19 In 2012, the Legislature amended Section 41-6a-1642 to allow a motor vehicle that is less
20 than two years old as of January 1 of any given year to be exempt from being required to
21 obtain an emission inspection. This provision is applicable to the extent allowed under
22 the current SIP for each area. This bill went into effect on October 1, 2012. In addition,
23 the legislature also amended Section 41-1a-205 to allow a safety and emissions
24 inspection issued for a motor vehicle during the previous 11 months may be used to
25 satisfy the safety and emissions inspection requirements³. The effective date of this bill is
26 January 1, 2013. The legislature also amended Section 41-1a-1223 to allow the counties
27 to collect a \$2.25 fee for those vehicles that are registered for a six-month period under
28 Utah Code Annotated 41-1a-215.5. The effective date of this bill is July 1, 2013.
29

30 Section 41-6a-1642 was amended in 2013 to include the date that notice is required and
31 the date the enactment, change, or repeal will take effect if a county legislative body
32 enacts, changes, or repeals the local emissions compliance fee. Section 41-6a-1642
33 provides that for a county required to implement a new vehicle emissions inspection and
34 maintenance program, but for which no current federally approved state implementation
35 plan exists, a vehicle shall be tested at a frequency determined by the county legislative
36 body, in consultation with the Air Quality Board, that is necessary to comply with federal
37 law or attain or maintain any national ambient air quality standard and establishes
38 procedures and notice requirements for a county legislative body to establish or change
39 the frequency of a vehicle emissions inspection and maintenance program.
40

41 In 2017, the Legislature amended Section 41-6a-1642 to allow a county that imposes a
42 local emissions compliance fee to use revenue generated from the fee to promote
43 programs to maintain a national ambient air quality standard. At that time the legislature

3 Utah Code 41-6a-1642(7) states that "the emissions inspection shall be required within the same time limit applicable to a safety inspection under Section 41-1a-205."

also amended 41-6a-1642 to state that vehicles may not be denied registration based solely on the presence of a defeat device covered in the Volkswagen partial consent decrees or a United States Environmental Protection Agency-approved vehicle modification.

Notification of Programmatic Changes: The legislative body of a county identified in Utah Code 41-6a-1642 (1) shall consult with the Director of the Utah Division of Air Quality prior to their public comment process for any amendments to their I/M regulations or ordinances. Consultation should include a written notice describing the proposed changes to the I/M program.

2. Applicability

General Applicability: Utah Code Annotated 41-6a-1642 gives authority to each county to implement and manage an I/M program to attain and maintain any national ambient air quality standard (NAAQS). Davis, Salt Lake, Utah, and Weber counties were required under Section 182 and 187 of the Clean Air Act to implement an I/M program to attain and maintain the ozone and carbon monoxide NAAQS. All of Utah's ozone and carbon monoxide maintenance areas are located in Davis, Salt Lake, Utah, and Weber counties. In addition, a motor vehicle I/M program is a control measure for attaining the particulate matter NAAQS in Cache, Davis, Salt Lake, Utah, and Weber counties. Utah's SIP for I/M is applicable county-wide in Cache, Davis, Salt Lake, Utah, and Weber counties.

3. General Summary

Below is a general summary of Utah's I/M programs. Part B, C, D, E and F of this section of the SIP provide a more specific summary of I/M programs for Cache, Davis, Salt Lake, Utah, and Weber counties. These parts also incorporate the individual county I/M ordinances/regulations and policies that provide for the enforceability of the respective I/M programs.

Network Type: All Utah I/M programs are comprised of a decentralized, test-and-repair network.

I/M program funding requirements: Counties with I/M programs allocate funding as needed to comply with the relevant requirements specified in Utah's SIP; the Utah statutes; county ordinances, regulations and policies; and the federal I/M program regulation. Program budgets include funding for resources necessary to adequately manage the programs conduct covert and overt audits, including repairs; assist and educate inspectors, station owners, and the public; manage, analyze, and report data; ensure compliance with the program by inspectors, stations, and vehicle owners; and evaluate and upgrade the programs.

1 *Funding mechanisms:* Utah's I/M programs are funded through several mechanisms
2 including, but not limited to, a fee which is collected at the time of registration by the
3 Utah Tax Commission Division of Motor Vehicles or the county Assessor's Office. Those
4 monies are remitted to the county in which the vehicle is registered. The collection of
5 fees for various permitting activities and the selling inspection certificates to inspection
6 stations are the other mechanisms. A fee schedule can be found in an appendix to each
7 county I/M ordinance or regulation.

8
9 *Government fleet:* Section 41-6a-1642(1)(b) of the Utah Code requires that all vehicles
10 owned or operated in the I/M counties by federal, state, or local government entities
11 comply with the I/M programs.

12
13 *Vehicles owned by students and federal employees:* Section 41-6a-1642(5) provides a
14 provision that counties may require universities and colleges located in Utah's I/M areas
15 to require proof of compliance with the I/M program for vehicles which are permitted to
16 park on campus regardless of where the vehicle is registered. Vehicles operated by
17 federal employees and operated on a federal installation located within an I/M program
18 area are also subject to the I/M program regardless of where they are registered. Proof of
19 compliance consists of a current vehicle registration in an I/M program area, an I/M
20 certificate of compliance or waiver, or evidence of exempt vehicle status.

21
22 *Rental vehicles:* All vehicles available for rent or use in an I/M county are subject to the
23 county I/M program. To the extent practicable, all vehicles principally operated in the
24 county are subject to the I/M program.

25
26 *Farm truck exemption:* Eligibility for the farm truck exemption from the I/M programs is
27 specified in Section 41-6a-1642(4) and must be verified in writing by county I/M
28 program staff.

29
30 *Out-of-state exemption:* Vehicles registered in an I/M county but operated out-of-state
31 are eligible for an exemption. The owner must complete Utah State Tax Commission
32 form TC-810 in order to be registered without inspection documentation. The owner
33 must explain why the vehicle is unavailable for inspection in Utah. Common situations
34 include Utah citizens that are military personnel stationed outside of the state, students
35 attending institutions of higher education elsewhere, and people serving religious
36 assignments outside the area. If the temporary address of the owner is located within
37 another I/M program area listed on the back of the form, the owner must submit proof of
38 compliance with that I/M program at the time of, and as a condition precedent to,
39 registration or renewal of registration. The vehicle owner must identify ~~[his or her]~~ their
40 anticipated date of return to the state and is required to have the vehicle inspected within
41 ten days after the vehicle is back in Utah.

42
43 *Motorist Compliance Enforcement Mechanism:* The I/M programs are registration-
44 enforced on a county-wide basis. A certificate of emissions inspection or a waiver or
45 other evidence that the vehicle is exempt from the I/M program requirements must be

1 presented at the time of, and as a condition precedent to, registration or renewal of
2 registration of a motor vehicles as specified in Section 41-6a-1642(1)(a). Owners of
3 vehicles operated without valid license plates or with expired license plates are subject to
4 ticketing by peace officers at any time. Proof of compliance consists of a current vehicle
5 registration in an I/M program area or an I/M certificate of compliance or waiver, or
6 evidence of exempt vehicle status.

7
8 *Valid registration required:* A certificate of emissions inspection or a waiver or other
9 evidence that the vehicle is exempt from the I/M program requirements must be
10 presented at the time of, and as a condition precedent to, registration or renewal of
11 registration of a motor vehicles as specified in Section 41-6a-1642 and 41-1a-203(1)(c).
12 The I/M inspection is required within two months prior to the month the registration
13 renewal is due as specified in Section 41-6a-1642(7) and 41-1a-205(2)(a). Owners of
14 vehicles operated without valid license plates or with expired license plates are subject to
15 ticketing by peace officers at any time. Registration status is also checked on a random
16 basis at roadblocks and in parking lots at various locations around the state. Per Section
17 41-1a-402, Utah license plates indicate the expiration date of the registration. Per Section
18 41-1a-1303, it is a Class C misdemeanor for a person to drive or move, or for an owner
19 knowingly to permit to be driven or moved, upon any highway any vehicle of a type that
20 is required to be registered in the state that is not registered in the state. Section 41-1a-
21 1315 specifies that it is a third degree felony to falsify evidence of title and registration.

22
23 *Change of ownership:* Vehicle owners are not able to avoid the I/M inspection program
24 by changing ownership of the vehicle. Upon change of vehicle ownership the vehicle
25 must be re-registered by the new owner. The new owner must present an emissions
26 certificate, waiver, or proof of exemption from the I/M program as a condition precedent
27 to registration⁴. The new annual registration and I/M inspection dates for the vehicle will
28 be the date of registration.

29
30 *Utah Tax Commission, and County Assessors roles:* The Utah Tax Commission Motor
31 Vehicle Division and county assessor deny applications for vehicle registration or
32 renewal of registration without submittal of a valid certificate of compliance, waiver, or
33 verified evidence of exemption. Altered or hand-written documents are not accepted. All
34 certificate data is collected by county I/M program auditors and subjected to scrutiny for
35 evidence of any improprieties.

36
37 *Database quality assurance:* The vehicle registration database is maintained and quality
38 assured by the Utah Division of Motor Vehicle (DMV). Each county I/M inspection
39 database is maintained and quality assured by the county I/M program staff. The county
40 I/M program has access to the DMV database and utilizes it for quality assurance
41 purposes. All databases are subject to regular auditing, cross-referencing, and analysis.
42 The databases are also evaluated using data obtained during roadblocks and parking lot

4 See Utah Code Section 41-6a-1642 (7) and 41-1a-205(2)(b) and (c)
Section X, Part A, page 6

1 surveys. Evidence of program effectiveness may trigger additional joint enforcement
2 activities.

3
4 *Oversight provisions:* The oversight program includes verification of exempt vehicle
5 status through inspection, data accuracy through automatic and redundant data entry for
6 most data elements, an audit trail for program documentation to ensure control and
7 tracking of enforcement documents, identification and verification of exemption-
8 triggering changes in registration data, and regular audits of I/M inspection records, I/M
9 program databases, and the DMV database.

10
11 *Enforcement staff quality assurance:* County I/M program auditors and DMV clerks
12 involved in vehicle registration are subject to regular performance audits by their
13 supervisors. All enforcement personnel (direct and indirect) involved in the motorist
14 enforcement program are subject to disciplinary action, additional training, and
15 termination for deviation from procedures. Specific provisions are outlined in the DMV
16 procedures manual which is available upon request. The county I/M audit policy
17 documents are provided in their respective part of this section.

18
19 *Quality Control:* The I/M counties maintain records regarding inspections, equipment
20 maintenance, and the required quality assurance activities. The I/M counties analyze I/M
21 program data and submit annual reports to the U.S. Environmental Protection Agency
22 and UDAQ upon request.

23
24 *Analyzer data collection:* Each county's I/M analyzer data collection system meets the
25 requirements specified under 40 CFR 51.365.

26
27 *Data analysis and reporting- Annual:* The I/M counties analyze and submit to EPA and
28 UDAQ an annual report for January through December of the previous year, which
29 includes all the data elements listed in 40 CFR Subpart S 51.366 by July of each year. If
30 a report is required earlier than annually, the counties will accommodate the request.

31
32 *General enforcement provisions:* The county I/M programs are responsible for
33 enforcement action against incompetent or dishonest stations and inspectors. Each county
34 I/M ordinance or regulation includes a penalty schedule.

35
36 *General public information:* The I/M counties have comprehensive public education and
37 protection programs, including providing strategies to educate the public on Utah's air
38 quality problems; ways that people can reduce emissions; the requirements of state and
39 federal law; the role of motor vehicles in the air quality problem; the need for and
40 benefits of a vehicle emissions inspection program; ways to operate and maintain a
41 vehicle in a low-emission condition; how to find a qualified repair technician; and the
42 requirements of the I/M program. Information is provided via county websites and direct
43 response to inquiries for information, reports, classes, pamphlets, fairs, school
44 presentations, workshops, news releases, posters, signs, and public meetings. Utah

1 Department of Environmental Quality also provides information on its website about
2 ways to operate and maintain a vehicle in a low-emission condition.

3
4 *County I/M technical centers:* Each I/M county operates an I/M technical center staffed
5 with trained auditors and capable of performing emissions tests. A major function of the
6 I/M technical centers is to serve as a referee station to resolve conflicts between permitted
7 I/M inspectors, stations, and motorists. Auditors actively protect consumers against fraud
8 and abuse by inspectors, mechanics, and others involved in the I/M program. Complaints
9 are received and investigated fully. Auditors advise motorists regarding emissions
10 warranty provisions and assist the owners in obtaining warranty covered repairs for
11 eligible vehicles. The I/M technical centers also provide motorists with information
12 regarding the I/M program, general air pollution issues, and emissions-related vehicle
13 repairs.

14
15 *Vehicle inspection report:* A vehicle inspection report (VIR) [~~is printed and~~] will be
16 [~~provided~~]issued to the motorist after each vehicle inspection. The VIR includes a public
17 awareness statement about vehicle emissions and lists additional ways that the public can
18 reduce air pollution. The test results are detailed on the VIR. Information about vehicle
19 emissions warranties and the benefits of emissions-related repairs are printed for vehicles
20 that failed the test. If the vehicle fails a retest, information about wavier requirements,
21 application procedures and the address and telephone number of the applicable I/M
22 technical center are printed on the VIR.

23
24 *Reciprocity between County I/M programs:* Utah I/M programs are conducting the same
25 test procedures and thereby agreed to recognize the validity of a certificate granted by
26 any Utah I/M program.
27

UTAH STATE IMPLEMENTATION PLAN

SECTION X

**VEHICLE INSPECTION AND
MAINTENANCE PROGRAM**

Part F

Cache County

Adopted by the Utah Air Quality Board
[November 6, 2013]

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UTAH STATE IMPLEMENTATION PLAN
SECTION X, PART F
VEHICLE INSPECTION AND MAINTENANCE (I/M) PROGRAM

1. Applicability

Cache County I/M program requirements: Cache County was designated nonattainment for the PM_{2.5} National Ambient Air Quality Standard (NAAQS) on December 14, 2009 (74 FR 58688, November 13, 2009). Accordingly, Cache County ~~[must]~~ implemented control strategies to attain the PM_{2.5} NAAQS. A motor vehicle emission inspection and maintenance (I/M) program ~~[has been]~~ was identified by the PM_{2.5} State Implementation Plan (SIP) as a necessary control strategy to attain the PM_{2.5} NAAQS as expeditiously as practicable. Therefore, pursuant to Utah Code Annotated 41-6a-1642, Cache County ~~[must]~~ implemented an I/M program that complies with the minimum requirements of 40 CFR Part 51 Subpart S. Cache County ~~[will]~~ implemented its I/M program county-wide. This program was approved by EPA on October 9, 2015 (80 FR 54237 September 9, 2019). Parts A and F of Section X demonstrate compliance with 40 CFR Part 51 Subpart S for Cache County.

2. Description of Cache I/M Programs

Below is a summary of Cache County's I/M program. Section X, Part F Appendices 1 and 2 contain the essential documents for Cache County's I/M program.

Network Type: Cache County's I/M program will comprise of a decentralized test-and-repair network.

Test Convenience: Cache County will make every effort to ensure that its citizens will have stations conveniently located throughout Cache County. Specific operating hours are not specified by the county; however, its Regulation requires that stations be open and available to perform inspections during a major portion of normal business hours of 8:00 a.m. to 5:00 pm Mondays through Fridays.

Subject fleet: All model year 19~~[69]~~96 and newer vehicles registered or principally-operated in Cache County are subject to the I/M program except for exempt vehicles.

Station/inspector Audits: Cache County's I/M program will regularly audit all permitted I/M inspectors and stations to ensure compliance with county I/M ordinances, regulations, and policies. Particular attention will be given to identifying and correcting any fraud or incompetence with respect to vehicle emissions inspections. Compliance with recordkeeping, document security, analyzer maintenance, and program security requirements will be scrutinized. The Cache County I/M program will have an active covert compliance program to minimize potential fraudulent testing.

Waivers: Cache County's I/M program allows for the issuance of waivers under limited circumstances. The procedure for issuing waivers is specified in Cache County's I/M regulation provided in Section 9[6] of Appendix 2 of this part of the SIP and meets the minimum waiver issuance criteria specified in 40 CFR Subparts 51.360.

Test frequency: Vehicles less than six years old as of January 1 on any given year will be exempt from an emissions inspection. All model year 19[69]96 and newer vehicles are subject to a biennial test.

Test Equipment: Specifications for the I/M test procedures, standards and analyzers are described in Cache County's I/M regulation provided in Appendix 2. Specifications for the test procedure and equipment were developed according to good engineering practices to ensure test accuracy. ~~[Analyzer calibration specifications]~~ Certified testing equipment and emissions test procedures meet the minimum standards established in Appendix A of the EPA's I/M Guidance Program Requirements, 40 CFR Part 51 Subpart S.

Test Procedures:

- The following vehicles are subject to an on-board diagnostic (OBD) II inspection:
 - 1996 and newer light duty vehicles¹ and
 - 2008 and newer medium duty vehicles²
- ~~[The following vehicles are subject to a two-speed idle test that is compatible with Section VI (Preconditioned Two Speed Idle Test) in Appendix B of the EPA I/M Guidance Program Requirements, 40 CFR 51, Subpart S:~~
 - ~~○ 1995 and older vehicles,~~
 - ~~○ 1996 to 2007 medium and heavy duty vehicles³ and~~
 - ~~○ 2008 and newer heavy duty vehicles.]~~

Test procedures are outlined in Appendix 2 of this part of the SIP

3. I/M SIP Implementation

The I/M program ordinance, regulations, policies, procedures, and activities specified in this I/M SIP revision shall be implemented by January 1, 20[14]21 and shall continue

¹ Light duty vehicles have a Gross Vehicle Weight of 8500 lbs or less.

² Medium duty vehicles have a Gross Vehicle Weight greater than 850[0]1 lbs but less than 14,000 lbs

³ ~~Heavy Duty vehicles have a Gross Vehicle Weight greater 14,000 lbs]~~

1 until a maintenance plan without an I/M program is approved by EPA in accordance with
2 Section 175 of the Clean Air Act.
3
4

ORDINANCE 2013-04**IMPLEMENTATION OF A VEHICLE EMISSIONS AND MAINTENANCE
PROGRAM IN CACHE COUNTY****1.0 PURPOSE**

The purpose of this ordinance is to reduce air pollution levels in Cache County by requiring emission inspections of on-road motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 1.1 Protect and promote the public health, safety, and welfare;
- 1.2 Improve air quality;
- 1.3 Comply with the federal regulations contained in 40 CFR part 51 subpart S;
- 1.4 Comply with the law enacted by the Legislature of the State of Utah, Section 41-6a-1642 Utah Code Annotated, 1953, as amended.

2.0 POWERS AND DUTIES

- 2.1 The Cache County Council (hereafter, "Council") has authority to implement a vehicle inspection and maintenance program under Section 41-6a-1642, Utah Code Annotated, 1953, as amended.
- 2.2 The Council is presently required by the EPA and the State of Utah to implement a vehicle emission inspection and maintenance program.
- 2.3 The Council hereby delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River District Board of Health (hereafter "Board"), to address all issues pertaining to the adoption and administration of the vehicle emission inspection and maintenance program.
- 2.4 The Council authorizes and directs the Board to adopt and promulgate rules and regulations to ensure compliance with EPA and State Implementation Plan requirements with respect to an emission inspection and maintenance program.

3.0 GENERAL PROVISIONS

- 3.1 The Board, in conjunction with its staff, will administer and enforce this ordinance.
- 3.2 The Board shall adopt vehicle emission and inspection rules and regulations which meet EPA and State Implementation Plan requirements.

3.3 The Council shall approve the initial Rules and Regulations established by the Board and all changes in Rules and Regulations.

4.0 GUIDELINES TO BE FOLLOWED BY THE BEAR RIVER BOARD OF HEALTH IN IMPLEMENTING A VEHICLE INSPECTION AND MAINTENANCE PROGRAM IN CACHE COUNTY

4.1 Vehicles registered in Cache County, that are not exempt from inspection requirements, will be inspected on the following schedule:

4.1.1 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a GVWR 8,500 lbs or less will be subject to inspection. All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer, with a GVWR greater than 8,500 lbs and less than 14,001 lbs will be subject to inspection.

4.1.2 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer, with a GVWR less than 14,001 lbs will be subject to inspection.

4.1.3 No emissions inspection will be required for any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacture.

4.1.4 Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

4.2 A maximum fee for inspection shall be set by the Board and approved by the Council. Part of this fee will be retained by the entity which performs the test and part may be remitted to the Board as reimbursement for administering the program. The intent of the Council is that this fee be as low as possible, while still maintaining the financial viability of the program.

4.3 If a vehicle fails the emissions inspection, a waiver may be granted that will allow the vehicle to be registered that year. In order to qualify for a waiver, the vehicle owner/operator must spend a minimum of \$200.00 on emissions related repairs and meet any other requirements established by the Board. A waiver will be issued once during the lifetime of the vehicle. Any changes to the minimum required repair expenditure to qualify for the waiver shall be approved by the Council.

4.4 Emission inspections in Cache County will be conducted by private firms, or by utilizing remote OBD technology. The Board shall establish criteria to ensure that testing is performed in accordance with state and federal requirements.

- 4.5 To fund the administration of the emissions inspection and maintenance program and other air quality improvement programs, the Council authorizes an Air Pollution Control fee to be assessed upon every motorized vehicle registered in Cache County at the time of registration as provide by Section 41-1a-1223, Utah Code Annotated, 1953, amended.

4.5.1 The fee is set at \$3.00 for each vehicle registration within the County under section 41-1a-215, Utah Code Annotated, 1953, as amended and at \$2.25 for each vehicle registration within the county for a six month registration period under Section 41-1a-215.5, Utah Code, 1953, as amended.

4.5.2 Motor vehicles that are exempt from the registration fee, and commercial vehicles with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953 as amended.

4.5.3 The fee shall be assessed beginning January 1, 2014.

5.0 REVIEW OF NEED FOR PROGRAM

The Council shall review the vehicle emissions and maintenance program at least every five years to evaluate the continuing need for the program.

6.0 EFFECTIVE DATE

These changes will take effect on January 1, 2021.

This ordinance takes effect on March 27, 2013. Following its passage, but prior to the effective date, a copy of the Ordinance shall be deposited with the County Clerk and a short summary of the ordinance shall be published in a newspaper of general circulation within the County as required by law.



Regulation No. 2013-1

VEHICLE EMISSIONS INSPECTION AND MAINTENANCE PROGRAM

Adopted by the Bear River Board of Health
May 9, 2013

Updated May 27, 2015

Updated April 10, 2019

Under Authority of Section 26A-1-121
Utah Code Annotated, 1953, as amended

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1.0 DEFINITIONS

For the purpose of this Regulation, the following terms, phrases, and words shall have the following meanings, unless otherwise defined:

Alternative Fuel: A fuel that is derived from resources other than petroleum. This includes but is not limited to: natural gas, propane, ethanol, and bio-diesel.

Bi-fuel Vehicle: A vehicle that has two separate fueling systems that enables the vehicle to run on one or the other (ex. Gasoline and natural gas). These vehicles may be switchable or non-switchable.

Board: See Board of Health.

Board of Health: The Bear River Board of Health.

Cache County Council: The elected Cache County Council representatives.

Certificate of Compliance: Proof that a vehicle meets all applicable requirements of the I/M Program. This proof may be sent in an electronic format to the Utah State Tax Commission.

Certification: Assurance by an authorized source, whether it be a laboratory, the manufacturer, the State, or the Department, that a specific product or statement is in fact true and meets all required requirements.

Certified Emissions Inspector: A person who has successfully completed all certification requirements and has been issued a current, valid Certified Emissions Inspector Certification by the Department.

Certified Testing Equipment: An official test instrument that has been approved by the Department to test motor vehicles for compliance with this Regulation.

Compliance: Verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meets all required accreditation requirements.

Compliance Assurance Inspection: A more detailed emissions inspection performed at the I/M Technical Center. Details of this inspection are found in Appendix D, Test Procedures.

Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list, as required in Section 6.8 and Appendix D, Test Procedures, shall be inspected at the I/M Technical Center.

Contractor: The emission inspection system contractor selected by the Department to provide specialized services related to the I/M Program in Cache County.

Council: See Cache County Council.

County: Cache County, Utah.

Department: The Bear River Health Department.

Director: The Director of the Bear River Health Department or his authorized representative.

DLC: Data Link Connector used in OBD applications is a 16 pin connector used by scan tools and other emission diagnostic equipment to communicate with the vehicle's computer for the purpose of collecting emissions related data.

DTC: Diagnostic Trouble Code is a standardized 5 digit code that is used to identify a specific fault that has occurred or is occurring in a vehicle.

Dual Fuel Vehicle: See Flexible Fuel Vehicle.

Emissions Control Systems: Parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the sole or primary purpose of reducing emissions.

EPA: The United States Environmental Protection Agency.

Flexible Fuel Vehicle: Also called Flex-Fuel Vehicle. A vehicle that is designed to run on more than one fuel, usually gasoline blended with ethanol (0-85%), and both fuels are stored in the same common tank.

I/M Program: See Vehicle Emissions Inspection and Maintenance Program.

I/M Program Station: A stationary Vehicle Emissions Inspection and Maintenance Station that qualifies and has a valid permit, issued by the Department, to operate as an emissions inspection and maintenance station in the I/M Program.

I/M Technical Center: A facility operated by the Department for technical or administrative support of the I/M Program.

Inspection: An official vehicle emissions test performed for the purpose of issuing a Certificate of Compliance or Waiver.

Inspector: A Certified Emissions Inspector.

MIL: Malfunction Indicator Light is an indicator located on the instrument panel that notifies the operator of an emissions fault.

Motor Vehicle: A self-propelled motorized vehicle with an internal combustion powered engine which is licensed for operation on public roads and/or streets. Motor Vehicles exempted from the inspection requirements of this Regulation are listed in Section 6.4 of this Regulation.

Non-certified Inspector: Any person who has not been certified by the Department to perform official emissions tests.

OBD: On Board Diagnostic refers to a vehicle's monitoring and diagnostic capabilities of its emissions systems.

Publicly-owned Vehicles: A motor vehicle owned by a government entity, including but not limited to the federal government or any agency thereof, the State of Utah or any agency or political subdivision thereof.

Readiness: Readiness is used to identify the state of a vehicle's emissions monitors as they are tested. Readiness does not indicate whether the monitors passed or failed the test, it only indicates whether or not the test has been run for any particular monitor.

Referee Inspection: An emissions inspection performed at the I/M Technical Center for the purpose of resolving disputes or overriding inspection criteria for cause.

Regulation: A regulation of the Bear River Health Department for a vehicle emissions inspection and maintenance program.

Rejection: A condition where a vehicle subject to an OBD inspection has not met the Readiness requirements as set forth by this Regulation. The vehicle has not failed the inspection but it must be driven additional miles until Readiness monitors are set "ready" or repairs have been made allowing readiness flags to set ready.

Station: An I/M Program Station.

Training Program: A formal program administered, conducted, or approved by the Department for the education of emission inspectors in basic emission control technology, inspection procedures, I/M Program policies, procedures, and this Regulation.

Vehicle Emission Control Information Label (VECI Label): An EPA required label found on a vehicle that contains the manufacturer's name and trademark, and an unconditional statement of compliance with EPA emission regulations. The label often contains a list of emissions control devices found on the vehicle.

Vehicle Emissions Inspection and Maintenance Program: The program established by the Department pursuant to Section 41-6a-1642 Utah Code Annotated, 1953, as amended, and Cache County Code Chapter 10.20.

Waiver: Documentation of proof that a vehicle which has not been able to meet applicable test requirements, has met the applicable repair and/or adjustment requirements of Section 9.5 of this Regulation.

2.0 PURPOSE

It is the purpose of this Regulation to reduce air pollution levels in Cache County by requiring inspections of in-use motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 2.1 Protect and promote the public health, safety, and welfare;
- 2.2 Improve air quality;
- 2.3 Comply with the applicable federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S;
- 2.4 Comply with the law enacted by the Legislature of the State of Utah, Sections 41-6a-1642 Utah Code Annotated, 1953, as amended; and
- 2.5 Comply with Cache County Code Chapter 10.20, Vehicle Emissions and Maintenance Program, as amended.

3.0 AUTHORITY AND JURISDICTION OF THE DEPARTMENT

3.1 Under Chapter 10.20.020(C) of Cache County Code, the Cache County Council (hereafter, Council) delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River Board of Health (hereafter Board), to address all issues pertaining to the adoption and administration of the Vehicle Emissions Inspection and Maintenance Program (hereafter I/M Program).

3.2 Under Chapter 10.20.020(D) of Cache County Code, the Council directs the Board to adopt and promulgate regulations to ensure compliance with State Implementation Plan requirements with respect to an I/M Program.

3.3 The Board is authorized to make standards and regulations pursuant to Section 26A-1-121(1) of the Utah Code Annotated, 1953, as amended.

3.4 The Board is authorized to establish and collect fees pursuant to Section 26A-1-114(1)(h)(i) of the Utah Code Annotated, 1953, as amended.

3.5 All aspects of the I/M Program within Cache County enumerated in Section 2.0 of this Regulation shall be subject to the direction and control of the Bear River Health Department (hereafter Department).

4.0 POWERS AND DUTIES

4.1 The Department shall be responsible for the enforcement and administration of this Regulation and any other powers vested in it by law and shall:

4.1.1 Make policies and procedures necessary to ensure that the provisions of this Regulation are met and that the purposes of this Regulation are accomplished;

4.1.2 Require the submission of information, reports, plans, and specifications from I/M Program Stations as necessary to implement the provisions, requirements, and standards of this Regulation;

4.1.3 Issue permits, certifications, and charge fees as necessary to implement the provisions, requirements, and standards of this Regulation; and

4.1.4 Perform audits of any I/M Program Station, issue orders and/or notices, hold hearings, and levy administrative penalties, as necessary to effect the purposes of this Regulation.

4.2 The Department may suspend, revoke, or deny a permit, subject to the Penalty Schedule in Appendix C, of an I/M Program Station and/or require the surrender of the permit of such I/M Program Station upon showing that:

4.2.1 A vehicle was inspected and issued a Certificate of Compliance by the station personnel that did not, at the time of inspection, comply with all applicable policies, procedures, and this Regulation;

4.2.2 A vehicle was inspected and failed by the I/M Program Station when, in fact, the vehicle was determined by the Department to be in such condition that it did comply with the requirements of this Regulation;

4.2.3 The I/M Program Station has violated any provisions of this Regulation, or any rule, regulation, or Department policy properly promulgated for the operation of an I/M Program Station;

4.2.4 The I/M Program Station is not operating from a location specified on the permit;

4.2.5 An official inspection was done by a Non-certified Inspector or a Non-certified Inspector has gained access to the official testing portion of the Certified Testing Equipment;

4.2.6 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment did not perform the inspection;

4.2.7 The Certified Testing Equipment has been tampered with or altered in any way contrary to the certification and maintenance requirements of the Certified Testing Equipment;

4.2.8 The I/M Program Station denies access to a representative of the Department to conduct an audit or other necessary business during regular business hours;

4.2.9 The I/M fee has been determined by the Department to be discriminatory in that different fees are assessed dependent upon vehicle ownership, vehicle make or model, owner residence, etc; or

4.2.10 The I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.3 The Department may suspend, revoke, or deny the certificate of a Certified Emissions Inspector, subject to the Penalty Schedule in Appendix C, and require the surrender of this certificate upon showing that:

4.3.1 The Certified Emissions Inspector caused a Certificate of Compliance to be issued without an approved inspection being made;

4.3.2 The Certified Emissions Inspector denied the issuance of a Certificate of Compliance to a vehicle that, at the time of inspection, complied with the law for issuance of said certificate;

4.3.3 The Certified Emissions Inspector issued a Certificate of Compliance to a vehicle that, at the time of issuance, was in such a condition that it did not comply with this Regulation;

4.3.4 Inspections were performed by the Certified Emissions Inspector, but not in accordance with applicable policies, procedures, and this Regulation;

4.3.5 The Certified Emissions Inspector allowed a Non-certified Inspector to perform an official Inspection or gain access to the official testing portion of the Certified Testing Equipment;

4.3.6 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment did not perform the inspection;

4.3.7 The Certified Emissions Inspector signed an inspection form or certificate stating that he had performed the emissions test when, in fact, he did not; or

4.3.8 The Certified Emissions Inspector employed at an I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.4 The Department shall respond, according to the policies and procedures of the Department, to public complaints regarding the fairness and integrity of the inspections they receive and shall provide a method that inspection results may be challenged if there is a reason to believe them to be inaccurate.

5.0 SCOPE

It shall be unlawful for any person to fail to comply with any policy, procedure, or regulation promulgated by the Department, unless expressly waived by this Regulation.

6.0 GENERAL PROVISIONS

Subject to the exceptions in Section 6.4 and pursuant to the schedule in Section 6.1, motor vehicles that are registered in Cache County, or principally operated within Cache County shall be subject to an emission inspection. Owners of vehicles that meet the requirements of Section 6.2 or 6.3 shall comply with the inspection requirements regardless of the county of registration.

6.1 Motor vehicles are subject to a biennial emissions inspection. Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

6.1.1 A Certificate of Compliance, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions

precedent to registration or renewal of registration of a motor vehicle in odd-numbered years for a vehicle with an odd-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 14 of this Regulation.

6.1.2 A Certificate of Compliance, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in even-numbered years for a vehicle with an even-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 14 of this Regulation.

6.1.3 The Air Pollution Control Fee shall be paid annually, as per Chapter 10.20.040(E) of Cache County Code, (see also Section 6.7 of this Regulation) as conditions precedent to registration or renewal of registration of a motor vehicle.

6.1.4 A Certificate of Compliance shall be valid for a period of time in accordance with Section 41-6a-1642(10) Utah Code Annotated, 1953, as amended.

6.2 Publicly-Owned Vehicles. Owners of publicly-owned vehicles shall comply with the inspection program requirements. Federally-owned vehicles and vehicles of employees operated on a federal installation that do not require registration in the State of Utah shall comply with the emissions testing requirements.

6.3 Vehicles of employees and/or students parked at a college or university that do not require registration in Cache County shall comply with the emissions testing requirements as authorized by 41-6a-1642(5)(a) Utah Code Annotated, 1953, as amended.

6.3.1 College or university parking areas that are metered or for which payment is required per use are not subject to the requirements in Section 6.3.

6.4 Vehicle Exemption. The following vehicles are exempt from these emissions testing requirements:

6.4.1 An implement of husbandry as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended;

6.4.2 A motor vehicle that meets the definition of a farm truck as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended, and has a gross vehicle weight rating of 12,001 pounds or more;

6.4.3 A vintage vehicle as defined in Section 41-21-1 Utah Code Annotated, 1953, as amended;

6.4.4 A custom vehicle as defined in Section 41-6a-1507 Utah Code Annotated, 1953, as amended;

6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;

6.4.6 A motorcycle as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended;

6.4.7 A motor vehicle powered solely by electric power;

6.4.8 Any gasoline or non-diesel based Alternative Fuel powered vehicle of model year 1995 or older;

6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;

6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;

6.4.11 Any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacturer;

6.4.12 Any diesel or diesel based Alternative Fuel powered vehicle 1997 and older;

6.4.13 Any diesel or diesel based Alternative Fuel powered vehicle with a gross vehicle weight rating greater than 14,000 pounds; and

6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended.

6.5 If a vehicle exempted by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official Inspection it shall be the responsibility of the Certified Emissions Inspector to inform the owner/operator of the vehicle that the vehicle is not required to have an official Inspection.

6.6 Official Signs.

6.6.1 All I/M Program Stations shall display in a conspicuous location on the premises an official sign provided and approved by the Department;

6.6.2 The readiness requirements for an OBD test as referenced in Appendix D shall be posted in a conspicuous place on the station's premises;

6.6.3 The station shall post on a clear and legible sign and in a conspicuous place at the station, the fees charged by that station for the performance of the emissions inspection;

6.6.4 The free re-inspection policy as referenced in Section 9.4 shall be posted in a conspicuous place on the station's premises;

6.6.5 The signs required by Sections 6.6.1 through 6.6.4 shall be located so as to be easily in the public view.

6.7 Fees.

6.7.1 The fees assessed upon I/M Program Stations and Certified Emissions Inspectors shall be determined according to a fee schedule adopted by the Board. The fee schedule is referenced in Appendix A to this Regulation and may be amended by the Board as necessary.

6.7.2 An Air Pollution Control Fee is hereby assessed upon every motor vehicle registered in Cache County as per Chapter 10.20.040 of Cache County Code. The fee will be assessed annually at the time of registration of the vehicle.

6.7.2.1 This fee assessment is included upon all motorized vehicles including those that are exempted from the inspection requirements of this Regulation by Section 6.4.

6.7.2.2 A motor vehicle that is exempt from the registration fee, and a commercial vehicle with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953, as amended and Chapter 10.20.040 of Cache County Code.

6.7.3 I/M Program Stations may charge a fee for the required service. The fee may not exceed, for each vehicle inspected, the amount set by the Board and referenced in Appendix A of this Regulation.

6.7.3.1 The inspection fee pays for a complete inspection leading to a Certificate of Compliance, a Rejection, or a failure. If a vehicle fails, or is rejected from an inspection, the owner/operator is entitled to one free re-inspection if he returns to the I/M Program Station that performed the original inspection within fifteen (15) calendar days from

the date of the initial inspection. The I/M Program Station shall extend the fifteen day free re-inspection to accommodate the vehicle owner/operator if the I/M Program Station is unable to schedule the retest of the vehicle within the fifteen day time period. The inspection fee shall be the same whether the vehicle passes or fails the emission test.

6.7.4 If a vehicle fails the inspection and is within the time and mileage requirements of the federal emissions warranty contained in section 207 of the Federal Clean Air Act, the Certified Emissions Inspector shall inform the owner/operator that he may qualify for warranty coverage of emission related repairs as provided by the vehicle manufacturer and mandated by the Federal Environmental Protection Agency (see 40 CFR Part 85, Subpart V).

6.8 Compliance Assurance List.

6.8.1 The Department reserves the right to recall a vehicle and perform a Compliance Assurance Inspection at the I/M Technical Center for the following reasons:

6.8.1.1 Suspected fraudulent registration;

6.8.1.2 Suspected fraudulent emissions inspection;

6.8.1.3 Suspected tampering of emissions control devices;

6.8.1.4 Violations of Section 41-6a-1626, Utah Code Annotated, 1953, as amended, regarding visible emissions; and

6.8.1.5 Any item listed in Appendix D, Test Procedures, that cause the vehicle to be flagged during an emissions inspection.

6.8.2 The Department shall create and maintain a list of vehicles that are subject to a Compliance Assurance Inspection at the I/M Technical Center.

6.8.2.1 The Compliance Assurance Inspection criteria listed in Appendix D, Test Procedures, shall be followed.

6.8.2.2 A vehicle that passes the Compliance Assurance Inspection may be removed from the Compliance Assurance List by Department personnel.

6.8.2.3 A vehicle that fails the Compliance Assurance Inspection may be subject to penalties as described in Section 14 of this regulation.

7.0 PERMIT REQUIREMENTS OF THE VEHICLE EMISSIONS I/M PROGRAM STATION

7.1 Permit Required.

7.1.1 No person shall in any way represent any place as an official I/M Program Station unless the station is operated under a valid permit issued by the Department.

7.1.2 The Department is authorized to issue or deny permits for I/M Program Stations.

7.1.3 No permit for any official I/M Program Station may be assigned, transferred, or used by any person other than the original owner identified on the permit application for that specific I/M Program Station.

7.1.4 The permit shall be posted in a conspicuous place within public view on the premises.

7.1.5 Application for an I/M Program Station permit shall be made to the Department upon a form provided by the Department. No permit shall be issued unless the Department finds that the facilities, and equipment of the applicant comply with the requirements of this Regulation and that competent personnel, certified under the provisions of Section 8.0, are employed and will be available to make inspections, and the operation thereof will be properly conducted in accordance with this Regulation.

7.1.5.1 An I/M Program Station shall notify the Department and cease any emission testing if the station does not have a Certified Emissions Inspector employed.

7.1.5.2 An I/M Program Station shall notify the Department upon termination and/or resignation of any Certified Emissions Inspector employed by the station.

7.1.5.3 An I/M Program Station shall comply with all the terms stated in the permit application and all the requirements of this Regulation.

7.1.5.4 An I/M Program Station shall provide a dedicated internet connection for the Certified Testing Equipment. A wireless internet connection may be required by the Contractor.

7.2 Permit Duration and Renewal

7.2.1 The permit for I/M Program Stations shall be issued annually and shall expire on the last day of the month, one year from the month of issue. The permit shall be renewable sixty days prior to the date of expiration.

7.2.2 It is the responsibility of the owner/operator of the I/M Program Station to pursue the permit renewal through appropriate channels.

7.3 I/M Program Station to hold Department Harmless

7.3.1 In making application for a permit or for its renewal, such action shall constitute a declaration by the applicant that the Department shall be held harmless from liability incurred due to action or inaction of I/M Program Station's owners or their employees.

7.4 An I/M Program Station shall be kept in good repair and in a safe condition for inspection purposes free of obstructions and hazards.

8.0 TRAINING AND CERTIFICATION OF INSPECTORS

8.1 Certified Emissions Inspector Certification Required.

8.1.1 No person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.

8.1.2 Applications for a Certified Emissions Inspector Certification shall be made upon an application form prescribed by the Department. No certification shall be issued unless:

8.1.2.1 The applicant has shown adequate competence by successfully completing all portions of the Certified Emissions Inspector Certification requirements as specified in this Regulation; and

8.1.2.2 The applicant has paid the required permit fees as set by the Board and referenced in Appendix A of this Regulation.

8.1.3 An applicant shall comply with all of the terms stated in the application and with all the requirements of this Regulation.

8.1.4 An applicant shall complete a Department approved training course and shall demonstrate knowledge and skill in the performance of emission testing and

use of the Certified Testing Equipment. Such knowledge and skill shall be shown by passing at minimum:

- 8.1.4.1 Operation and purposes of emission control systems;
- 8.1.4.2 Inspection procedures as outlined in this Regulation and prompted by the Certified Testing Equipment ;
- 8.1.4.3 Operation of the Certified Testing Equipment;
- 8.1.4.4 The provisions of Section 207(b) warranty provisions of the Federal Clean Air Act, and other federal warranties;
- 8.1.4.5 The provisions of this Regulation and other applicable Department policies and procedures; and
- 8.1.4.6 A performance qualification test including but not limited to the following:
 - (a) Demonstration of skill in proper use, care, and maintenance, of the Certified Testing Equipment;
 - (b) Demonstration of ability to conduct the inspection; and
 - (c) Demonstration of ability to accurately enter data in the Certified Testing Equipment.

8.1.5 The Department shall issue a Certified Emissions Inspector Certificate to an applicant upon successful completion of the requirements of this section.

8.1.6 The Certified Emissions Inspector Certificates are and remain the property of the Department, only their use and the license they represent is tendered.

8.1.7 Certified Emissions Inspector Certifications shall not be transferred from one person to another person.

8.2 Recertification Requirements for Certified Emissions Inspectors

8.2.1 The Department may renew certifications for an existing Certified Emissions Inspector after a properly completed renewal form is submitted, reviewed, and approved, the recertification requirements have been completed, the fees are paid and the Certified Emissions Inspector has complied with this Regulation.

8.2.2 Certified Emissions Inspectors shall be required to recertify annually. Failure to recertify shall result in suspension or revocation of the Certification as described in this Regulation.

8.2.3 Certified Emissions Inspectors shall complete a Department approved refresher course every 2 years. Applicants for recertification shall complete a Department approved refresher course no more than sixty days prior to the date of expiration.

8.3 Certification Expiration

8.3.1 The Certified Emissions Inspector Certification shall be issued annually and shall expire on the last day of the month one year from the month of issue. The certification shall be renewable sixty days prior to the date of expiration.

8.3.2 It is the responsibility of the Certified Emissions Inspector to pursue the renewal of the Certification.

8.4 Certified Emissions Inspector Certification Denial, Suspension and Revocation

8.4.1 Certified Emissions Inspector Certifications may be suspended or revoked by the Department for violations of this Regulation.

8.4.2 Suspension or revocation of Certified Emissions Inspector Certifications shall follow the provisions of Appendix C of this Regulation.

8.4.3 The Department may deny issuance of a Certified Emissions Inspector Certification to an individual that works as an emissions inspector in another county in Utah and is currently under suspension or revocation in that program.

9.0 INSPECTION PROCEDURE

9.1 The official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures, as referenced in this section and Appendix D, Test Procedures, are to be followed.

9.2 A complete official test must be performed any time an inspection is requested. The Certified Emissions Inspector shall not perform any part of the inspection without initiating an official test on the Certified Testing Equipment.

9.3 The Certified Emissions Inspector shall perform the official vehicle emissions test using the proper testing procedure.

9.3.1 All gasoline, and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a gross vehicle weight rating 8,500 pounds or less, shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.3.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a gross vehicle weight rating greater than 8,500 pounds and less than 14,001 pounds shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.3.3 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer with a gross vehicle weight rating less than 14,001 pounds shall be tested as specified in Appendix D, Diesel Test Procedures, unless specifically exempted by this Regulation.

9.4 Retesting Procedures

9.4.1 If the vehicle fails the initial emissions inspection, the owner/operator shall have fifteen calendar days in which to have repairs or adjustments made and return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection.

9.4.2 If the vehicle is Rejected from the initial emissions inspection for failure to complete Readiness requirements, the owner/operator shall have fifteen calendar days in which to return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection.

9.4.3 If the vehicle owner/operator does not return to the I/M Program Station that performed the initial inspection within fifteen calendar days the I/M Program Station is under no obligation to offer a free re-inspection.

9.5 Waivers

9.5.1 A Waiver may be granted and a Certificate of Compliance issued for 1996 and newer model year vehicles if all of the following requirements are met:

9.5.1.1 Air pollution control devices identified in the VECI Label are in place and apparently operable on the vehicle. If the VECI Label is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. If the devices have been removed

or rendered inoperable, they shall be replaced or repaired before a Waiver is granted;

9.5.1.2 The vehicle continues to fail the inspection after \$200.00 has been spent on acceptable emissions related repair costs for that specific vehicle, and proof of repair costs for that specific vehicle have been provided to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made at a repair station that employs individuals with current ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00;

9.5.1.3 The vehicle is not within the time and mileage requirements of the federal emissions warranties. Any vehicle that is within time and mileage requirements of the federal emissions warranties shall not be eligible for a Waiver, but shall be repaired to pass the testing requirements; and

9.5.1.4 A vehicle that is Rejected from the OBD Inspection may qualify for a Waiver if it meets requirements set forth in Appendix F, Waivers for "Not Ready" Vehicles.

9.5.2 As used in 9.5.1, acceptable emissions related repairs:

9.5.2.1 May include repairs performed up to 60 days prior to the official emissions test, provided appropriate documentation is supplied to the Department;

Diagnostic work performed, including Diagnostic Trouble Codes if applicable, must be properly documented to justify any repairs performed;

9.5.2.2 Does not include the fee paid for the test;

9.5.2.3 Does not include costs associated with the repairs or replacements of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, replacement, or repair is due to disconnection of, tampering with, or abuse of the emissions control systems;

- 9.5.2.4 Refers to repairs, maintenance, and diagnostic evaluations done in accordance with manufacturer's specifications, to the extent that the purpose is to reduce emissions;
- 9.5.2.5 Repairs performed on OBD compliant vehicles should be directly related to the diagnostic trouble codes identified by the vehicle and by further diagnostic tests on the vehicle;
- 9.5.2.6 Does not include parts replaced on OBD compliant vehicles that cannot be justified through diagnostic trouble codes or further diagnostic tests on the vehicle.

9.5.3 A Waiver shall only be issued by the Department. A Waiver shall only be issued after determining that the vehicle complies with the requirements of this Section.

9.5.4 A Waiver shall only be issued once to any vehicle that qualifies, throughout the lifetime of the vehicle.

9.5.5 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Waiver.

9.6 The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA, the Board, and the Council to seek approval to incorporate the new technology as a testing method.

10.0 ENGINE SWITCHING

10.1 Engine switching shall be allowed only in accordance with EPA policy, as detailed in EPA's Engine Switching Fact Sheet, dated March 13, 1991, and EPA's Addendum to Mobile Source Enforcement Memorandum 1A, dated September 4, 1997.

10.2 Vehicles subject to an emissions inspection, as referenced in Section 6.0 of this Regulation, that do not meet the requirements of Section 10.1 shall be deemed as tampered and are not eligible for a Waiver, unless they are restored to the original engine and emission control configuration.

11.0 SPECIFICATIONS FOR CERTIFIED TESTING EQUIPMENT

11.1 Approval of Certified Testing Equipment

11.1.1 Certified Testing Equipment shall meet the specifications as detailed in Appendix E.

11.1.2 It shall be illegal for any person to modify the hardware or software of Certified Testing Equipment without approval by the Department and/or Contractor.

11.1.3 It shall be illegal for any person to gain access to any Department or Contractor controlled portions of Certified Testing Equipment without approval by the Department and/or Contractor.

12.0 QUALITY ASSURANCE

12.1 A quarterly inspection shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. During the time of the inspection by the Department, the Department's representative shall have exclusive access to the Certified Testing Equipment. Inspections may be performed utilizing technology integrated into the Certified Testing Equipment.

12.2 An annual covert inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station.

12.3 The Department may increase the frequency of inspections for I/M Program Stations and/or Certified Emissions Inspectors if the Department receives information of a violation of this Regulation.

12.4 The Department shall regularly monitor I/M Program Stations and/or Certified Emissions Inspectors through inspection records and/or technology integrated into the Certified Testing Equipment.

13.0 DISCIPLINARY PENALTIES AND RIGHT TO APPEAL

13.1 When the Department, or its representative(s), receives information of a violation of any regulation contained herein which may result in a permit denial, revocation, or suspension, the Department shall notify the affected entity, in writing, informing the entity of the violation and penalties to be enforced. The affected entity may request a hearing within ten calendar days of the Department giving notice of the potential permit denial, revocation, or suspension. Only a written request for a hearing shall be honored by the Department. No appeal may be made on a formal warning.

13.1.1 In considering the appropriate administrative action to be taken as indicated in Appendix C, the Director shall consider the following:

- 13.1.1.1 whether the violation was unintentional or careless;
- 13.1.1.2 the frequency of the violation or violations;
- 13.1.1.3 the inspection and covert inspection history of the I/M Program Station and the Certified Emissions Inspector;
- 13.1.1.4 whether the fault lies with the I/M Program Station or the Certified Emissions Inspector.

13.1.2 After consideration of the factors in Section 13.1.1 the Director may take appropriate administrative action as indicated in Appendix C against either the I/M Program Station, the Certified Emissions Inspector, or both.

13.2 Appeals Hearing Procedure:

13.2.1 An appeals hearing shall be held at the request of the affected entity in order to determine the accuracy of information obtained by the Department and whether there are mitigating factors which would justify a reduction of the imposed penalties.

13.2.2 The requesting party may bring to the hearing any witnesses and any evidence believed to be pertinent to the disciplinary action.

13.2.3 The appeal shall be heard by the Vehicle Inspection and Maintenance Appeal Board, hereafter I/M Board, consisting of at least three persons, who are not employees of Bear River Health Department, appointed by the Board. The I/M Board shall have the discretion to determine which witnesses shall be heard and what evidence is relevant.

13.2.4 Violations determined to be intentional or flagrant shall result in the maximum enforcement of the penalty schedule pursuant to Appendix C.

13.2.5 In considering whether to reduce a penalty indicated by Appendix C, the I/M Board and the Department shall consider the following:

- 13.2.5.1 whether the violation was unintentional or careless;
- 13.2.5.2 the frequency of the violation or violations;
- 13.2.5.3 the inspection and covert inspection history of the I/M Program Station and the Certified Emissions Inspector;

- 13.2.5.4 whether the fault lies with the I/M Program Station, the Certified Emissions Inspector, or both.

13.3 Written notice of the final determination of the I/M Board, including the I/M Board's finding under Section 14.2.5, shall be made within ten calendar days after the conclusion of the appeals hearing.

14.0 PENALTY

14.1 Any person who is found guilty of violating any of the provisions of this Regulation, either by failing to do those acts required herein or by doing a prohibited act, shall be guilty of a class B misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended. If a person is found guilty of a subsequent similar violation within two years, he shall be guilty of a class A misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

14.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.

14.3 The Cache County Attorney's Office may initiate legal action, civil or criminal, requested by the Department to abate any condition that exists in violation of this Regulation.

14.4 In addition to other penalties imposed by a court of competent jurisdictions, any person(s) found guilty of violating any of this Regulation shall be liable for all expenses incurred by the Department.

14.5 A Penalty Schedule for permit warning, suspension, or revocation is adopted as Appendix C and may be amended by the Board as the Board deems necessary to accomplish the purposes of this Regulation.

14.6 The Department shall request that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle's registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.

15.0 SEVERABILITY


If any provision, clause, sentence, or paragraph of this Regulation or the application thereof to any person or circumstances shall be held to be invalid, such invalidity shall not affect the other provisions or applications of this Regulation. The valid part of any clause, sentence, or paragraph of this Regulation shall be given independence from the invalid provisions or application and to this end the provisions of this Regulation are hereby declared to be severable.

16.0 EFFECTIVE DATE

This Regulation shall become effective on January 1, 2021 as adopted by the Bear River Board of Health.

Approved and Adopted this 10th day of April, 2019.



James Swink, Chair
Bear River Board of Health

Lloyd Berentzen, M.B.A.
Executive Director
Bear River Health Department

APPENDIX A – FEE SCHEDULE

Permitting of an official I/M Program Station	\$250.00
Annual Renewal of I/M Program Station	\$50.00
Expired I/M Program Station Renewal	\$75.00
I/M Program Station Re-location	\$75.00
Permitting of a Certified Emissions Inspector	\$25.00
Renewal of Certified Emissions Inspector	\$15.00
Expired Certified Emissions Inspector Renewal	\$25.00
Official Station Sign	Cost
APC Fee for 12 month registration	\$3.00
APC Fee for 6 month registration	\$2.25
Emissions Inspection Fee – OBD Test	\$15.00
Emissions Inspection Fee –Tampering	\$20.00

APPENDIX B - RESERVED

APPENDIX C – PENALTY SCHEDULE

Violation (resets after 2 years of no similar violations unless revoked)	1st Occurrence	2nd Occurrence	3rd Occurrence	4th Occurrence
Failure to inspect or substituting a vehicle other than the vehicle on the test record – Registering a failing vehicle <i>(intentional pass)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Passing a failing vehicle or recording pass for tampering on a tampered vehicle <i>(gross negligence)</i>	Tech: 30 day suspension and mandatory retraining	Tech: 60 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years	
	Station: 15 day suspension	Station: 30 day suspension	Station: 60 day suspension	Station: Revocation of permit for up to 5 years
Falsifying an inspection record or emissions certificate or Failing a passing vehicle <i>(intentional)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Non-certified person performing test – Using another inspector's access <i>(gross negligence table)</i>	Tech: 60 day suspension	Tech: 180 day suspension	Tech: Revocation of permit for up to 5 years	
	Station: 60 day suspension	Station: 180 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Inaccurate or incomplete data entry <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years
Failure to follow proper test procedures – Other regulation violations <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years

APPENDIX D – TEST PROCEDURES

OBDII Test Procedures for gasoline and non-diesel based Alternative Fuel powered vehicles

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)

- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the screen prompts until the test is complete.

- 5 For 1996-2000 model year vehicles two (2) supported readiness monitors are allowed to be “not ready”. For 2001 and newer vehicles one (1) supported readiness monitor is allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.
 - 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.

- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.
- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, and/or oxygen sensor;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The presence of an OBD VIN in a vehicle that does not support OBD VINs;
 - 9.7 The absence of an OBD VIN in a vehicle that supports OBD VINs; or
 - 9.8 A change in PID count since the last inspection.
- 10 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 11 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures

All diesel powered vehicles 2007 and newer, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.
- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.
- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the screen prompts until the test is complete.
- 5 Two supported readiness monitors are allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.
 - 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.
- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, NMHC, and/or NOx/SCR;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The absence of an OBD VIN; or
 - 9.7 A change in PID count since the last inspection.
- 10 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 11 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 12 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

All diesel powered vehicles 1998-2006, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 3 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 4 If the OBDII System is identified on the VECI label, the procedure in Section 2 through 5 shall be followed.
 - 4.1 An inspection of the OBDII System shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

Compliance Assurance Inspection

- 1 A vehicle that is referred to the I/M Technical Center for a Compliance Assurance Inspection shall be subject to an official emissions inspection. A visual anti-tampering inspection shall also be included in every Compliance Assurance Inspection. The air pollution control devices listed in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the VECI label is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
 - 1.1 A vehicle that has missing or tampered air pollution control devices will fail the Compliance Assurance Inspection and will not be issued a Certificate of Compliance.
 - 1.2 A vehicle that has missing or tampered air pollution control devices and has already been issued a Certificate of Compliance will be required to replace or repair the devices. Owners/operators of vehicles that do not comply will be subject to the penalties in this Regulation.
- 2 The Department will use data obtained by the Utah Division of Motor Vehicles and inspection data to determine if a vehicle should be subject to a Compliance Assurance Inspection.
- 3 The owner/operator of a vehicle subject to a Compliance Assurance Inspection will be notified in writing of the requirement to present the vehicle for inspection.

Referee Inspection

- 1 Vehicles may be referred to the I/M Technical Center for a Referee Inspection. During a Referee Inspection the Department may override the normal testing criteria and issue a Certificate of Compliance for the following reasons:
 - 1.1 The vehicle will not communicate with the Certified Testing Equipment but will communicate with other scan tools. The vehicle must meet all other testing requirements including readiness status and MIL status; or
 - 1.2 The vehicle has met the criteria to be issued a Waiver.
- 2 A Referee Inspection may also be performed when an owner/operator believes the emissions inspection performed at an I/M Program Station was not done correctly.

APPENDIX E – CERTIFIED TESTING EQUIPMENT STANDARDS

1 General

This appendix contains specifications for Contractors to design Certified Testing Equipment to be used in the Cache County I/M Program.

1.1 Design Goals

Certified Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment. The software must be designed for maximum operational simplicity. The software must prevent users from clearing Diagnostic Trouble Codes (DTC), changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Certified Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data.

These technical specifications contain the minimum requirements for Certified Testing Equipment used to perform official emissions inspections in Cache County, UT.

1.2 Manuals

All Certified Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial startup instructions. The manual may be provided in electronic format and shall be accessible from the Certified Testing Equipment.

1.3 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Certified Testing Equipment.

The Contractor shall provide a minimum of one-year warranty coverage on each unit of Certified Testing Equipment sold or leased. The one-year warranty coverage shall begin on the date of purchase and shall be included in the unit pricing for the Certified Testing Equipment. An extended warranty shall be made available to the I/M Program Stations that purchase or lease Certified Testing Equipment.

1.4 Contractor Provided Services

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Certified Testing Equipment:

- Delivery, set-up, and verification of proper functionality of the Certified Testing Equipment; and
- Training on the use and maintenance of the Certified Testing Equipment.

The Contractor shall provide the following services to the I/M Program Station during the initial one-year warranty coverage period and thereafter to any I/M Program Station that purchases an extended warranty:

- Full system support and repair as detailed in the warranty coverage agreement; and
- Appropriate service response, either on-site or remote, by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, and national/state holidays (New Year's Day, Human Rights Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), of a request from the I/M Program Station. All system repairs, component replacements, and/or Certified Testing Equipment adjustments must be accomplished within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Certified Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.5 Tamper Resistance

The Certified Testing Equipment operators, Department personnel, and Contractor authorized service technicians shall be prevented from changing any inspection results, programs, or data contained on the Certified Testing Equipment. The Contractor shall use appropriate software and/or hardware provisions to protect files and programs.

2 – Hardware/Software Requirements

2.1 Accessing the OBD System

The Certified Testing Equipment must include hardware and software necessary to access the on-board computer systems of vehicles subject to OBD inspections. This includes the following:

- 1996 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 8,500 pounds or less
- 2008 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less
- 2007 and newer diesel and diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less

The Certified Testing Equipment shall be compliant with the recommended practices regarding OBD inspections contained in J1962, J1978, and J1979 as published by the Society of Automotive Engineers (SAE). The Certified Testing Equipment must be able to connect to the vehicle's data link connector (DLC) and access, at a minimum, the following OBD data:

- Service modes \$01, \$03, \$06, \$07, \$09, \$0A

The Certified Testing Equipment must be capable of communicating with all OBD vehicles that use, at a minimum, the following communications protocols:

- International Organization for Standardization (ISO) 9141
- Variable Pulse Width (VPW)
- Pulse Width Modulation (PWM)
- Keyword Protocol 2000 (KWP)
- Controller Area Network (CAN)

2.2 Barcode Scanner

The Certified Testing Equipment must include a bar code scanner capable of reading both 1D and 2D barcodes. The bar code scanner must be able to read the barcode through a windshield. The barcode scanner must be able to withstand multiple 6.5 foot (2 meter) drops to concrete and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

The bar code scanner may be a stand alone device or may be integrated into the Certified Testing Equipment.

2.3 Camera

Certified Testing Equipment shall be equipped with video capturing equipment. The video capturing equipment must capture video from each official emissions inspection.

APPENDIX F – WAIVERS FOR “NOT READY” VEHICLES

A vehicle owner may be eligible for a Waiver when their gasoline powered vehicle is “Not Ready” and the following conditions are met:

- 1 The vehicle is not subject to a modified OBDII test because of OBD deficiencies;
- 2 The vehicle has an official test performed showing a “Not Ready” status. The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer.
- 3 A second inspection has been performed showing the following:
 - 3.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 3.2 The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles;
 - 3.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 3.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 4 A third inspection has been performed by a second repair station showing the following:
 - 4.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 4.2 The initial and third test dates are separated by at least 14 days and the vehicle has traveled a minimum of 400 miles;
 - 4.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 4.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 5 At least one of the statements must come from the vehicle manufacturer’s dealership repair station. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a “Ready” status. The dealership must also document that the vehicle’s computer is up to date and functioning properly. The computer must be updated if required or recommended by the manufacturer. If the computer is updated the vehicle must complete the appropriate drive cycles following the update.
- 6 The cost requirements as set forth by this Regulation must be met in order to qualify for a Waiver. In order to count labor the repair station must employ individuals with current ASE L1, ASE A8, or other certifications approved by the Department.

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Thomas Gunter, Rules Coordinator

DATE: June 5, 2019

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; and R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The amendments to Section X, Vehicle Inspection and Maintenance Program, Parts A and F will have to be incorporated into the Utah Air Quality Rules. R307-110-31 is the rule that incorporates the new amendments to Part A into the rules and R307-110-36 is the rule that incorporates the new amendments to Part F. If the Board adopts the amendments proposed to Parts A and F, these amendments will become part of Utah's State Implementation Plan when the rule is finalized.

Staff Recommendation: Staff recommends the Board propose R307-110-31 and R307-110-36 for public comment.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

**"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

R307. Environmental Quality, Air Quality.**R307-110. General Requirements: State Implementation Plan.**

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~[December 5]~~ September 4, 201~~[2]~~9, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5]~~, 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

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The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

**"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

R307. Environmental Quality, Air Quality.**R307-110. General Requirements: State Implementation Plan.**

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as most recently adopted by the Utah Air Quality Board on ~~[November 6]~~ September 4, 201~~3~~9, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5]~~, 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

(a) conducting the annual application process and awarding of funds;

(b) monitoring program implementation; and

(c) gathering and reporting required data.

~~[(2) To effectively administer the IGP program, the Superintendent shall reserve up to 5% of the appropriation for the program for administrative and evaluation purposes.~~

(3) An LEA that receives program grant money shall annually provide to the Superintendent the information that is necessary for the Board's report to the Utah Intergenerational Welfare Reform Commission as required by Subsection 53F-5-207(7).

[(4)](3) The annual report required under Subsection 53F-5-207(7) shall include:

(a) the progress of LEA programs in expending grant money;

(b) the progress of LEA programs in improving the academic achievement of children affected by intergenerational poverty; and

(c) the LEA's coordination efforts with the Department of Workforce Services, the Department of Health, the Department of Human Services, and the juvenile courts.

KEY: public schools, poverty, intervention

Date of Enactment or Last Substantive Amendment: ~~[August 11, 2016]~~2019

Authorizing, and Implemented or Interpreted Law: Art X Sec 3; 53E-3-401(4); 53F-5-207

Environmental Quality, Air Quality **R307-110-31** Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43806

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part A. As a result, Section R307-110-31 incorporates Section X, Part A into the rule, and must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-31 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ♦ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ♦ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ♦ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ♦ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ♦ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES: After conducting a thorough analysis, it was determined that this proposed rule amendment will not result in a fiscal impact to businesses.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:

ENVIRONMENTAL QUALITY
AIR QUALITY
FOURTH FLOOR
195 N 1950 W
SALT LAKE CITY, UT 84116-3085
or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

- ♦ Mark Berger by phone at 801-536-4000, by FAX at 801-536-0085, or by Internet E-mail at mberger@utah.gov

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 07/31/2019

THIS RULE MAY BECOME EFFECTIVE ON: 09/04/2019

AUTHORIZED BY: Bryce Bird, Director

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0

Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~December 5~~ September 4, 2012², pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5,~~ 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality **R307-110-36** Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43807

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part F. As a result, Section R307-110-36 incorporates Section X, Part F into this rule, must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-36 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ◆ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ◆ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ◆ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ◆ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~December 5~~ September 4, 2012², pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5,~~ 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality **R307-110-36** Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43807

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part F. As a result, Section R307-110-36 incorporates Section X, Part F into this rule, must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-36 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ◆ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ◆ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ◆ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ◆ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES: After conducting a thorough analysis, it was determined that this proposed rule amendment will not result in a fiscal impact to businesses.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:
 ENVIRONMENTAL QUALITY
 AIR QUALITY
 FOURTH FLOOR
 195 N 1950 W
 SALT LAKE CITY, UT 84116-3085
 or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

♦ Mark Berger by phone at 801-536-4000, by FAX at 801-536-0085, or by Internet E-mail at mberger@utah.gov

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 07/31/2019

THIS RULE MAY BECOME EFFECTIVE ON: 09/04/2019

AUTHORIZED BY: Bryce Bird, Director

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0

Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as most recently adopted by the Utah Air Quality Board on ~~November 6, 2013~~ September 4, 2013, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5, 2019]~~

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality

R307-204

Emission Standards: Smoke Management

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43808

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: H.B. 155, signed 03/21/2019, amended Section 19-2-107.5: Solid Fuel Burning. As a result, Rule R307-204

TECHNICAL SUPPORT DOCUMENT
FOR A CAA 110(l) DEMONSTRATION
FOR THE LOGAN, UT-ID PM_{2.5} NONATTAINMENT AREA

MAY 2019
Utah Division of Air Quality
Planning Branch/Mobile Sources

Abstract

This report discusses the CAA section 110(l) demonstration regarding the emissions impact of removing the Inspection and Maintenance Program Two Speed Idle (TSI) testing procedure for Cache County in 2021. This report includes the on-road mobile inventory impacts for the Logan, UT-ID PM_{2.5} nonattainment area. This assessment will cover the service life of the TSI program from 2021-2026.

On-road inventories were calculated using the EPA MOVES2014b (Motor Vehicle Emission Simulator) and were developed by the following agencies:

Cache Metropolitan Planning Organization (CMPO): Cache County
Utah Division of Air Quality (UDAQ)

Summary on-road emissions table inventories for a representative winter weekday are located at the end of the TSD for the following years: 2021-2026.

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ii. Overview

The State of Utah submitted a State Implementation Plan (SIP) for the EPA designated 24-hour PM_{2.5} Logan, Utah UT-ID nonattainment area in December of 2014. EPA approved the Cache County Inspection and Maintenance program (implemented by the Bear River Health Department) on September 9, 2015 (80 FR 54237) and it was included as an additional reasonable control measure in the SIP on November 23, 2018 (83 FR 59315). Pursuant to Utah Code Annotated 41-6a-1642(1), Cache County officials successfully implemented an I/M program on January 1, 2014. Cache County's I/M program is comprised of a decentralized test and repair network and requires a biennial test for all light duty gasoline vehicles 1969 and newer. Vehicles that are older than Model Year 1995 undergo Two Speed Idle (TSI) testing procedures while vehicles newer than Model Year 1996 are required to undergo On Board Diagnostic (OBD) testing procedures. The program exempts vehicles less than six years old from an emission inspection. The details of the program can be found in Section X Part F of the Utah SIP.

In December 2018 the Bear River Health Department proposed amending the Vehicle Emissions and Maintenance program. The proposal made to the Cache County Council was to discontinue the TSI program due to a diminishing fleet of older light duty gasoline vehicles participating within the program combined with increasing cost of maintaining TSI testing equipment. The Cache County Council passed the proposal to discontinue the TSI program with an effective date of January 1, 2021. The Utah Division of Air Quality, EPA Region 8, and the Bear River Health Department have been coordinating to ensure that the proposed I/M program changes do not interfere with State and Federal air quality regulations.

Section 110(l) of the Clean Air Act (CAA) allows for revisions to a SIP so long as it does not interfere with any applicable requirement concerning attainment and reasonable further progress or any other applicable requirement of this chapter of the CAA. This 110(l) demonstration addresses the removal of the I/M Program TSI biennial testing procedure for Cache County in 2021 and shows that there will be minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} nonattainment area (NAA) from 2021-2026 and demonstrates non-interference for other National Ambient Air Quality Standards (NAAQS) being monitored in Cache County, Utah.

The removal of the TSI program will not interfere with the ability of the Logan, UT-ID NAA to continue to attain the EPA 24 hour PM_{2.5} national ambient air quality standard despite a very small increase in emissions. This document explains the emissions modeling assumptions used to develop the on-road mobile emissions estimates for the 110(l) demonstration. The modeling portion of the demonstration will cover the EPA MOVES model service life emissions credit for the TSI program for the years 2021-2026. The TSI testing program covers light duty gasoline vehicles that are older than Model Year 1995 and was established as a control strategy in the Logan, UT-ID PM_{2.5} Nonattainment SIP (December 3, 2014).

The analysis simply looks at the emissions credit assigned to the overall I/M program, including On Board Diagnostic (OBD) and TSI within Cache County within the 2021-2026 period and compares it to the emissions credit without the TSI program (OBD only). Emission estimates are

based on meteorological conditions that occurred during three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. Inventory estimations were created at the county level representing an average January weekday.

Emission estimates are confined to the EPA approved MOVES2014b (May 2017) emissions model. This model produces emissions estimates for on-road vehicles by providing emissions profiles for exhaust, evaporative, and wear conditions. Inputs include speeds, vehicle fuel profiles and specifications, vehicle miles traveled (VMT), I/M program profiles, VMT mix, vehicle age distributions, and meteorological conditions. Specific MOVES input parameters and outputs can be found in the Cache IM Program 110(l).xlsx workbook and specific MOVES modeling inputs can be furnished upon request.

Additional analysis was also performed comparing the PM_{2.5} SIP I/M 2015 program credit that the EPA approved for Cache County to the new proposed I/M program for 2021. Ambient air quality monitoring data from the Smithfield, Cache County site also demonstrates non-interference with the NAAQS when looking at the small increase in emissions due to the removal of the TSI program. Cache County, Utah is currently attaining the six NAAQS.

iii. MOVES Modeling Procedure

The discussion below identifies the procedures followed to model the episodic inventories.

The following agencies developed on-road mobile source emissions inventories:

CMPO: Cache Metropolitan Planning Organization
Utah Division of Air Quality

1. MOVES Default Database Enhancement for Local Roads

The local road enhancement allows the EPA MOVES2014b model to produce emissions results according to the Highway Performance Monitoring System (HPMS) utilized by the Federal Highway Administration, Utah Department of Transportation, Cache Metropolitan Planning Organization (CMPO) and the Utah Division of Air Quality (UDAQ). Arterial and local roads have very different travel characteristics. This simplified approach allows each road type to have specific VMT, speed and vehicle distribution by road type (vehicle mix) inputs. Modeling specific road types creates an inventory approach that matches the HPMS road types that are reported within local transportation plans.

Modifications to Local Road Tables

<u>Table Names</u>	<u>Data Columns</u>	<u>Description of Changes</u>
avgspeeddistribution	roadTypeID	Road types rural local(32) and urban local(52) added.
drivescheduleassoc	avgSpeedBinID	
hourvmtfraction	driveScheduleID	
roadtype	hourVMTFraction	
roadtypedist	roadDesc	
zoneroadtype	roadTypeVMTFraction	

2. MOVES2014 Daily Pollutants

Pollutants selected for analysis:

- Ammonia (NH₃)
- Oxides of Nitrogen (NO_x)
- PM_{2.5} & PM₁₀ (Primary Exhaust, Brake, & Tire)
- Sulfur Dioxide (SO₂)
- Volatile Organic Compounds (VOC)

3. MOVES2014b Local Model Inputs

County Data Manager Development

MOVES organizes data inputs into databases called County Data Manager (CDM) tables. CDMs were developed for all of the Logan, UT-ID PM_{2.5} NAA for: 2021-2026, for an average weekday in January.

(1) Average Speed Distribution and VMT

Cache MPO obtained average speed distributions from its 2019 Travel Demand Model. The TDM analyzes thousands of separate traffic segments called "links" that together comprise the network of roads in Cache County. Each link is assigned, for each of the four major time periods during the day (AM peak, midday, PM peak and nighttime), an average speed, an increment of VMT and an increment of VHT (vehicle hours traveled). A specific number of links are assigned to each of the UDOT HPMS functional classes (road types, e.g., rural local, urban local, rural minor arterial, urban minor arterial, and so on). In effect, average speeds, VMT and VHT for each of the functional classes are combined to obtain average speed, VMT and VHT for rural arterials, urban arterials, rural local roads and urban local roads. (There are no interstates in Cache County).

(2) AVFT (Diesel, Gasoline, Electric Fractions)

MOVES AVFT (alternative vehicle and fuel technology) was updated with 2017 State DMV registration data on fuel type for registered light duty vehicles (passenger cars and light duty trucks). The fuel type data provided covers gasoline, diesel, flex, and electric light duty vehicles. The DMV fractions were specifically applied to all model years for passenger car and light duty trucks.

(MOVES source types 21,31,32) MOVES2014a default AVFT values were used for all remaining source type vehicles (MOVES sourcetypes 40-60).

(3) Fuel & HourVMTFraction

MOVES 2014a default fuel and hour VMT fraction parameters were used.

(4) HPMSvTypeYear (VMT)

Cache MPO VMT was constructed from its 2019 Travel Demand Model. UDOT Division of Systems Planning and Programming provided 2017 VMT travel fractions for FHWA vehicle classes grouped by Gross Vehicle Weight Rating (GVWR) ranges. The travel fractions were obtained by county from automated pneumatic counters that detect axle spacing and "weigh-in motion" (WIM) counters placed on arterial, interstate, and local roads. UDOT also provided average VMT daily adjustment factors (2016) to provide winter month and daily activity detail. The VMT daily adjustment factors allow for the modeling of an average weekday, Saturday, and Sunday in January.

(5) I/M Coverage

UDAQ constructed I/M Program coverages in consultation with the Bear River Health Department in Cache County. The Cache County I/M program exempts the first six model years and performs a biennial test on light duty gasoline vehicles beginning in the seventh model year. Vehicles older than 1995 undergo a TSI test and vehicles newer than 1996 undergo OBD. The EPA MOVES model service life emissions credit for the TSI program is essentially removed in 2026. The compliance rate was calculated utilizing EPA I/M reports and incorporated the waiver rate, total OBD and TSI failures, and regulatory class coverage. This work is shown in the Cache IM Program 110(l).xlsx workbook.

(6) Road Type Distribution

UDOT Division of Systems Planning and Programming provided 2017 VMT travel fractions for FHWA vehicle classes grouped by Gross Vehicle Weight Rating (GVWR) ranges. The travel fractions were obtained by county from automated pneumatic counters that detect axle spacing and "weigh-in motion" (WIM) counters placed on arterial, interstate, and local roads. CMPO TDM 2019

VTM and Vehicle Mix data were used to construct road type distribution and VTM by sourcetype.

(7) Source Type Age Distribution

Utah Department of Motor Vehicle (DMV) provided a single age distribution for passenger cars (21) and light trucks (31,32) for 2017. The age distribution was held constant for all years modeled. MOVES2014b default age distribution values were used for all remaining source type vehicles.

(8) Source Type Year (Vehicle Population)

CMPO utilized Utah DMV 2017 registration data for Model Years 2017-1969 for motor cycles, passenger cars, and light duty trucks up to 10,000 GVWR. The MOVES default vehicle fraction for these vehicles was used to determine the difference between cars and trucks since the DMV data could not discern between a passenger car and light duty truck. MOVES 2014a default vehicle populations were used for heavy duty vehicles. The VTM growth rate from the CMPO travel demand model was used to estimate future population growth.

(10) ZoneMonthHour (Meteorological Data)

The UDAQ Technical Analysis Section provided metrological conditions from Meso West University of Utah from three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. The UDAQ modeling section provided hourly temperature and relative humidity profiles from representative weather stations in Cache County. The meteorology data represents the hour by hour average for all of the days in the 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17 PM_{2.5} episodes. The average of all the hourly temperatures and relative humidity readings over the three episodes for each representative weather station was used to reflect the atmospheric conditions that represent the PM_{2.5} season.

iv. Emissions Trend Estimates

The Logan, UT-ID PM_{2.5} Nonattainment SIP (December 3, 2014) established the TSI testing biennial emissions control strategy that covers light duty gasoline vehicles that are older than Model Year 1995. The purpose of this 110(l) demonstration is to show the amount of emissions credit being lost by the removal of the TSI testing program in the Logan, UT-ID NAA in 2021. Specifically, the demonstration shows the small amount of emissions credit being lost will not interfere with the ability of the NAA to continue to attain the EPA 24 hour PM_{2.5} standard from 2021-2026.

The MOVES model service life credit for the TSI program will essentially phased out completely by the year 2026. The MOVES model only accepts vehicle inputs covering 30

model years. In 2026 the model year coverage is 2026-1996. This modeling concept does not allow for the input of vehicles that are model year 1995 and older to be modeled in the year 2026. The emissions trends in Table 1 on page 12 shows the fading impact of the TSI program in terms of reduced vehicles being tested and the result of diminishing emissions credit through the 2021-2025 testing period.

MOVES 2014b vehicle input estimates regarding the removal of the TSI emissions program for the years 2021-2026 for the Logan, UT-ID PM_{2.5} NAA shows that the number of pre-1996 biennial TSI vehicles being tested over time is declining. Meanwhile, the number of vehicles undergoing biennial OBD testing program is growing (1996 and newer). In the year 2021, it is estimated that the amount of pre-1996 TSI vehicles are estimated to be 1,899 vehicles. In 2025, the number of pre-1996 TSI vehicles is trending downward toward 1,341 vehicles. This is a result of the pre-1996 TSI vehicles getting older and leaving the fleet. Meanwhile in the same period the number of vehicles that are 1996 and newer undergoing OBD is increasing. In the year 2021 it is estimated that the number of 1996 and newer vehicles will be 28,325. In 2025, that number is trending upward 30,958 vehicles being tested. The vehicle population of pre-1996 TSI vehicles TSI is declining as older vehicles are being scrapped, while the 1996 OBD vehicle population is growing as brand new vehicles are being purchased.

The MOVES 2014b emissions estimates for the TSI program shows that the emissions credit from pre-1996 vehicles TSI is declining over a period of time as the overall vehicle population of pre-1996 TSI vehicles declines. In 2021, the removal of the TSI program is projected to increase emissions by an estimated .053 tons per day of NO_x and VOC emissions combined, an increase of 2.53%. This is equivalent to increasing emissions by 107 pounds per day. In 2025 the removal of the TSI program is projected to increase emissions by an estimated .036 tons per day of NO_x and VOC combined, an increase of 2.27%. This is equivalent to increasing emissions by 73 pounds per day. In 2026 the TSI emissions credit is essentially phased out of the EPA MOVES emission model. (Please note that MOVES emissions model only provides TSI emissions credits for Oxides of Nitrogen (NO_x) and Volatile Organic Compounds (VOC).

Additional analysis was performed comparing the original 2015 SIP I/M program credit to the new proposed I/M program for 2021. The original SIP I/M program (OBD+TSI) was estimated to reduce emissions by .426 tons per day of NO_x and VOC combined in 2015. In 2021, the removal of the TSI program is projected to increase emission by an estimated .053 tons per day of NO_x and VOC emissions combined. This is equivalent to increasing emissions by 107 pounds per day. Using the emissions increase from the removal of the TSI program the original 2015 I/M program would have seen an estimated increase in NO_x emissions by 11% and VOC by 13%, or a combined 12% increase. This analytical approach is conservative and does not take into account the shrinking vehicle population and emissions of pre 1996 vehicles, increase vehicle population and emissions of 2017 newer model year vehicles that meet Federal Tier 3 emissions standards, and VMT growth. The conservative analysis does indicate that the previous MOVES modeling demonstration showing a 2.53% increase in emissions in 2021 is within a reasonable range.

	Cache Attainment SIP I/M Emissions Credit for 2015 OBD + TSI			TSI I/M Credit to be removed for 2021			Cache Attainment SIP I/M Emissions Credit for 2015 OBD			Lost TSI Credit % for 2015		
	NOx	VOC	NOx +VOC	NOx	VOC	NOx +VOC	NOx	VOC	NOx +VOC	NOx	VOC	NOx +VOC
Tons Per Day	0.214	0.2	0.426	0.025	0.029	0.053	0.189	0.183	0.372	-11.45%	-13.44%	-12.44%
LBS Per Day	428	424	852	49	57	107	379	367	746			

The design values at the monitor in Smithfield, Cache County are in compliance with the following NAAQS and indicate that a 2.5% increase in NOx and VOC emissions combined will not interfere with Cache County, Utah being able to attain the NAAQS.

Smithfield NAAQS Design Value						
Parameter	2016	2017	2018	Design Value (3 yr. Average)	Standard	Unit
Ozone	0.062	0.063	0.069	0.064	0.07	ppm
PM 2.5 98 %tile	34	36	27.9	33	35	µg/m ³
PM 2.5 Annual Mean	7.6	7.9	7.3	7.6	12	µg/m ³
PM 10	0	0	0	0	1	Est. Exceedances
NO ₂	37	37	30	35	100	ppb

The table below shows the most current air quality standards for the six criteria air pollutants and Cache County's designation status with respect to each standard.

Current National Ambient Air Quality Standards and Designation Status For Cache County, UT				
Pollutant	Primary/ Secondary NAAQS	Averaging Time	Level	Designation Status
CO	Primary	8-hour	9 ppm	Attainment
		1-hour	35 ppm	Attainment
Lead	Primary and Secondary	Rolling 3 month average	0.15 µg/m ³	Attainment
NO ₂	Primary	1-hour	100 ppb	Attainment
	Primary and Secondary	Annual	53 ppb	Attainment
Ozone	Primary and Secondary	8-hour	0.070 ppm	Attainment
PM _{2.5}	Primary	Annual	12 µg/m ³	Attainment
	Secondary		15 µg/m ³	Attainment
	Primary and Secondary	24-hour	35 µg/m ³	Nonattainment
PM ₁₀	Primary and Secondary	24-hour	150 µg/m ³	Attainment
SO ₂	Primary	1-hour	75 ppb	Attainment
	Secondary	3-hour	0.5 ppm	Attainment

Although Logan, UT-ID is currently designated as a nonattainment area for the 24-hr PM_{2.5} NAAQS, on October 19, 2018 (83 FR 52983), the EPA published a final determination that based on the validated data from 2015-2017, the Logan, UT-ID nonattainment area attained the 2006 primary and secondary 24-hr PM_{2.5} NAAQS by the December 31, 2017 attainment date. Utah will submit a redesignation request to EPA in 2019.

The CAA 110(l) demonstration regarding the removal of the I/M TSI for Cache County, Utah in 2021 finds that there will be minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} NAA from 2021-2026. The TSI test program covers light duty gasoline vehicles that are older than Model Year 1995. The MOVES 2014b vehicle population and emissions estimates clearly indicate a shrinking vehicle population and emissions from pre-1996 TSI light duty gasoline vehicles. The increase in emissions from the MOVES analysis indicated a 2.5% increase of NO_x and VOC combined.

Table 1. Cache County On-Road Mobile Source Emissions for Average Winter Weekday (Tons Per Day)

Cache County On-Road Mobile Source Emissions for Average Winter Weekday (Tons Per Day) DMV																	
Year	I/M Test Type	NH3	NOx TPD	PM10	PM25	SO2	VOC TPD	VOC_Refuel	VMT	Vehicles Tested	NOx TPD Shortfall	NOx TPD % Change	VOC TPD Shortfall	VOC TPD % Change	NOx + VOC TPD (Total) Shortfall	NOx + VOC LBS (Total) Shortfall	NOx + VOC TPD % Change
2021	OBD + TSI	0.10	2.51	0.43	0.17	0.01	1.85	0.08	3,312,467	30,224							
	OBD	0.10	2.54	0.43	0.17	0.01	1.88	0.08	3,312,467	28,325							
	(-)TSI		-0.02	0.00	0.00	0.00	-0.03	0.00		1,899	-0.025	-0.98%	-0.029	-1.55%	-0.053	-107	-2.53%
2022	OBD + TSI	0.10	2.29	0.42	0.16	0.01	1.75	0.08	3,373,213	30,730							
	OBD	0.10	2.31	0.42	0.16	0.01	1.77	0.08	3,373,213	29,181							
	(-)TSI		-0.02	0.00	0.00	0.00	-0.02	0.00		1,549	-0.021	-0.93%	-0.025	-1.41%	-0.046	-92	-2.34%
2023	OBD + TSI	0.10	2.09	0.42	0.15	0.01	1.65	0.07	3,433,958	31,244							
	OBD	0.10	2.11	0.42	0.15	0.01	1.67	0.07	3,433,958	29,671							
	(-)TSI		-0.02	0.00	0.00	0.00	-0.02	0.00		1,573	-0.018	-0.87%	-0.021	-1.25%	-0.039	-78	-2.12%
2024	OBD + TSI	0.10	1.91	0.41	0.14	0.01	1.59	0.07	3,494,700	31,767							
	OBD	0.10	1.92	0.41	0.14	0.01	1.62	0.07	3,494,700	30,447							
	(-)TSI		-0.01	0.00	0.00	0.00	-0.03	0.00		1,320	-0.015	-0.77%	-0.026	-1.64%	-0.041	-81	-2.40%
2025	OBD + TSI	0.10	1.78	0.41	0.13	0.01	1.53	0.07	3,568,339	32,298							
	OBD	0.10	1.79	0.41	0.13	0.01	1.55	0.07	3,568,339	30,958							
	(-)TSI		-0.01	0.00	0.00	0.00	-0.02	0.00		1,341	-0.013	-0.74%	-0.023	-1.53%	-0.036	-73	-2.27%
2026	OBD	0.10	1.61	0.41	0.13	0.01	1.42	0.07	3,641,979	32,865							

v. Appendix: Inventories For 110(l) Demonstration

Input files will be furnished upon request:

vi. References

The following documents were used as references in creating the 110(l) demonstration:

1. U.S. Environmental Protection Agency, Office of Transportation and Air Quality (OTAQ), Assessment and Standards Division, "MOVES2014a User Guide", EPA-420-B-095, November 2015, <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNCY.txt>
2. U.S. Environmental Protection Agency, OTAQ, Transportation and Regional Programs Division, "MOVES2014 and 2014a Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity", EPA-420-B-15-093), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NN9L.txt> , November 2015.
4. I/M Programs Bear River Health Department, 655 East 1300 North. Logan, UT 84341, 801-792-6500
5. MESOWEST UTAH, (met data archive), University of Utah, Department of Atmospheric Sciences, <http://mesowest.utah.edu/>.
6. US EPA Design Value Report May 6, 2019

SPECIAL NOTICES

Environmental Quality Air Quality

Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Parts A and F

On 06/05/2019, the Utah Air Quality Board proposed for a 30-day public comment period, amendments to SIP Section X. Vehicle Inspection and Maintenance Program, Parts A and F. More information on the proposed SIP amendment, to include the amended text of the plan and its supporting 110(l) demonstration, is available for review at: <https://deq.utah.gov/public-notices-archive/air-quality-rule-plan-changes-open-public-comment>.

The comment period closes at 5:00 p.m. on 07/31/2019. Comments postmarked on or before that date will be accepted. Comments may be submitted by electronic mail to: mberger@utah.gov or may be mailed to:

*ATTN: SIP Section X, Vehicle Maintenance Program
Bryce Bird, Director
Utah Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820*

End of the Special Notices Section

(a) conducting the annual application process and awarding of funds;

(b) monitoring program implementation; and

(c) gathering and reporting required data.

~~[(2) To effectively administer the IGP program, the Superintendent shall reserve up to 5% of the appropriation for the program for administrative and evaluation purposes.~~

~~[(3)]~~(2) An LEA that receives program grant money shall annually provide to the Superintendent the information that is necessary for the Board's report to the Utah Intergenerational Welfare Reform Commission as required by Subsection 53F-5-207(7).

~~[(4)]~~(3) The annual report required under Subsection 53F-5-207(7) shall include:

(a) the progress of LEA programs in expending grant money;

(b) the progress of LEA programs in improving the academic achievement of children affected by intergenerational poverty; and

(c) the LEA's coordination efforts with the Department of Workforce Services, the Department of Health, the Department of Human Services, and the juvenile courts.

KEY: public schools, poverty, intervention

Date of Enactment or Last Substantive Amendment: ~~[August 11, 2016]~~2019

Authorizing, and Implemented or Interpreted Law: Art X Sec 3; 53E-3-401(4); 53F-5-207

Environmental Quality, Air Quality **R307-110-31** Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43806

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part A. As a result, Section R307-110-31 incorporates Section X, Part A into the rule, and must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-31 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ♦ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ♦ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ♦ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ♦ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ♦ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES: After conducting a thorough analysis, it was determined that this proposed rule amendment will not result in a fiscal impact to businesses.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:

ENVIRONMENTAL QUALITY
AIR QUALITY
FOURTH FLOOR
195 N 1950 W
SALT LAKE CITY, UT 84116-3085
or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

- ♦ Mark Berger by phone at 801-536-4000, by FAX at 801-536-0085, or by Internet E-mail at mberger@utah.gov

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 07/31/2019

THIS RULE MAY BECOME EFFECTIVE ON: 09/04/2019

AUTHORIZED BY: Bryce Bird, Director

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0

Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~December 5~~ September 4, 2012², pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5,~~ 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality R307-110-36 Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43807

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part F. As a result, Section R307-110-36 incorporates Section X, Part F into this rule, must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-36 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ◆ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ◆ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ◆ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ◆ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~December 5~~ September 4, 2012², pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5,~~ 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality **R307-110-36** Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43807

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: The Utah Air Quality Board (Board) has proposed for public comment amended Utah State Implementation Plan, Section X, Part F. As a result, Section R307-110-36 incorporates Section X, Part F into this rule, must be amended to change the Board adoption date to the anticipated adoption date of the amended plan.

SUMMARY OF THE RULE OR CHANGE: Section R307-110-36 is amended by changing the date of the last adoption by the Air Quality Board to 09/04/2019.

STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE: Subsection 19-2-104(1)(a)

MATERIALS INCORPORATED BY REFERENCE:

- ◆ Updates Utah State Implementation Plan Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability, published by Utah Division of Air Quality, 09/04/2019

ANTICIPATED COST OR SAVINGS TO:

- ◆ **THE STATE BUDGET:** This rule change is not expected to have any fiscal impact on the state budget.
- ◆ **LOCAL GOVERNMENTS:** This rule change is not expected to have any fiscal impact on local governments.
- ◆ **SMALL BUSINESSES:** This rule change is not expected to have any fiscal impact on small businesses.
- ◆ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** This rule change is not expected to have any fiscal impact on persons other than small businesses, businesses, or local government entities.

COMPLIANCE COSTS FOR AFFECTED PERSONS: This rule change will not have a compliance cost for affected persons.

COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES: After conducting a thorough analysis, it was determined that this proposed rule amendment will not result in a fiscal impact to businesses.

THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:
 ENVIRONMENTAL QUALITY
 AIR QUALITY
 FOURTH FLOOR
 195 N 1950 W
 SALT LAKE CITY, UT 84116-3085
 or at the Office of Administrative Rules.

DIRECT QUESTIONS REGARDING THIS RULE TO:

♦ Mark Berger by phone at 801-536-4000, by FAX at 801-536-0085, or by Internet E-mail at mberger@utah.gov

INTERESTED PERSONS MAY PRESENT THEIR VIEWS ON THIS RULE BY SUBMITTING WRITTEN COMMENTS NO LATER THAN AT 5:00 PM ON 07/31/2019

THIS RULE MAY BECOME EFFECTIVE ON: 09/04/2019

AUTHORIZED BY: Bryce Bird, Director

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0

Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses' revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as most recently adopted by the Utah Air Quality Board on [November 6]September 4, 201[3]9, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: [March 5,] 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Environmental Quality, Air Quality

R307-204

Emission Standards: Smoke Management

NOTICE OF PROPOSED RULE

(Amendment)

DAR FILE NO.: 43808

FILED: 06/13/2019

RULE ANALYSIS

PURPOSE OF THE RULE OR REASON FOR THE CHANGE: H.B. 155, signed 03/21/2019, amended Section 19-2-107.5: Solid Fuel Burning. As a result, Rule R307-204

SPECIAL NOTICES

Environmental Quality Air Quality

Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Parts A and F

On 06/05/2019, the Utah Air Quality Board proposed for a 30-day public comment period, amendments to SIP Section X. Vehicle Inspection and Maintenance Program, Parts A and F. More information on the proposed SIP amendment, to include the amended text of the plan and its supporting 110(l) demonstration, is available for review at: <https://deq.utah.gov/public-notices-archive/air-quality-rule-plan-changes-open-public-comment>.

The comment period closes at 5:00 p.m. on 07/31/2019. Comments postmarked on or before that date will be accepted. Comments may be submitted by electronic mail to: mberger@utah.gov or may be mailed to:

*ATTN: SIP Section X, Vehicle Maintenance Program
Bryce Bird, Director
Utah Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820*

End of the Special Notices Section

DAQ-081-19

M E M O R A N D U M

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Mat Carlile, Environmental Planning Consultant

DATE: August 16, 2019

SUBJECT: PROPOSE FOR FINAL ADOPTION: Amend SIP Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability; and Part F, Vehicle Inspection and Maintenance Program, Cache County.

Utah Code Annotated 41-6a-1642 gives authority to each county to design and manage a vehicle inspection and maintenance (I/M) program when it is required to attain and maintain any national ambient air quality standard. Section X incorporates these county programs into the Utah State Implementation Plan (SIP). Section X, Part A summarizes I/M requirements that are common among all I/M programs. Subparts B through F contain the requirements for each county's unique I/M program. Section X, Part F is the section unique to Cache County's I/M program. On June 5, 2019, the Board proposed for public comment the amendments to SIP Section X, Parts A and F.

The amendments to Part A incorporate amendments to Utah Code 41-6a-1642. Additionally, language has been added to clarify that counties must consult with the DAQ before making any changes to their program. These amendments do not change the overall I/M programs. The amendments to Part F remove the tailpipe emission inspection two speed idle Test (TSI) currently required for vehicles manufactured before 1996.

During the public comment period, a backsliding demonstration was provided that demonstrated that the removal of TSI would not interfere with any Clean Air Act (CAA) requirement concerning attainment of an air quality standard. This analysis is required under Section 110(1) of the CAA when removing control measures from the SIP.

A public comment period was held from July 1 to July 31, 2019. No comments were received and no public hearing was requested.

Recommendation: Staff recommends the Board adopt the amended SIP Section X, Parts A and F as proposed.

DAQ-079-19

M E M O R A N D U M

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Mat Carlile, Environmental Planning Consultant

DATE: August 16, 2019

SUBJECT: FINAL ADOPTION: Amend R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; and R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

When sections of the State Implementation Plan (SIP) are amended by the Board, those sections must be incorporated into the Air Quality Rules. On June 5, 2019, the Board proposed amendments to R307-110-31 and R307-110-36 to incorporate into its rule changes made to Section X, Vehicle Inspection and Maintenance Program, Parts A and F.

A public comment period was held from July 1 to July 31, 2019. No comments were received, and no hearing was requested.

Recommendation: Staff recommends that the Board adopt R307-110-31 and R307-110-36 as proposed.

R307-110-31
File number 43806 AMD
Effective September 5, 2019

CERTIFIED A TRUE COPY
Office of Administrative Rules

R307. Environmental Quality, Air Quality.**R307-110. General Requirements: State Implementation Plan.****R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.**

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on September 4, 2019, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone**Date of Enactment or Last Substantive Amendment: September 5, 2019****Notice of Continuation: January 27, 2017****Authorizing, and Implemented or Interpreted Law: 19-2-104**

!-dar--

R307-110-36
File number 43807 AMD
Effective September 5, 2019

CERTIFIED A TRUE COPY
Office of Administrative Rules

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as most recently adopted by the Utah Air Quality Board on September 4, 2019, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: September 5, 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

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NOTICES OF RULE EFFECTIVE DATES

State law provides for agencies to make their administrative rules effective and enforceable after publication in the *Utah State Bulletin*. In the case of **PROPOSED RULES** or **CHANGES IN PROPOSED RULES** with a designated comment period, the law permits an agency to make a rule effective no fewer than seven calendar days after the close of the public comment period, nor more than 120 days after the publication date. In the case of **CHANGES IN PROPOSED RULES** with no designated comment period, the law permits an agency to make a rule effective on any date including or after the thirtieth day after the rule's publication date, but not more than 120 days after the publication date. If an agency fails to file a **NOTICE OF EFFECTIVE DATE** within 120 days from the publication of a **PROPOSED RULE** or a related **CHANGE IN PROPOSED RULE** the rule lapses.

Agencies have notified the Office of Administrative Rules that the rules listed below have been made effective.

NOTICES OF EFFECTIVE DATE are governed by Subsection 63G-3-301(12), Section 63G-3-303, and Sections R15-4-5a and R15-4-5b.

Abbreviations

AMD = Amendment
CPR = Change in Proposed Rule
NEW = New Rule
R&R = Repeal & Reenact
REP = Repeal

Environmental Quality

Air Quality

No. 43806 (AMD): R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability
Published: 07/01/2019
Effective: 09/05/2019

No. 43807 (AMD): R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County
Published: 07/01/2019
Effective: 09/05/2019

No. 43808 (AMD): R307-204. Emission Standards: Smoke Management
Published: 07/01/2019
Effective: 09/05/2019

Health

Family Health and Preparedness, Emergency Medical Services

No. 43881 (AMD): R426-2. Emergency Medical Services Provider Designations for Pre-Hospital Providers, Critical Incident Stress Management and Quality Assurance Reviews
Published: 08/01/2019
Effective: 09/11/2019

No. 43882 (AMD): R426-4. Operations
Published: 08/01/2019
Effective: 09/11/2019

Regents (Board of)

Administration

No. 43853 (NEW): R765-620. Access Utah Promise Scholarship Program
Published: 08/01/2019
Effective: 09/10/2019

Tax Commission

Administration

No. 43883 (AMD): R861-1A-46. Procedures for Purchaser Refund Requests Pursuant to Utah Code Ann. Sections 59-1-1410 and 59-12-110
Published: 08/01/2019
Effective: 09/12/2019

Auditing

No. 43884 (AMD): R865-19S-93. Waste Tire Recycling Fee Pursuant to Utah Code Ann. Section 19-6-808
Published: 08/01/2019
Effective: 09/12/2019

Property Tax

No. 43885 (AMD): R884-24P-24. Form for Notice of Property Valuation and Tax Changes Pursuant to Utah Code Ann. Sections 59-2-918.5 through 59-2-924
Published: 08/01/2019
Effective: 09/12/2019

Certification

I, Liam O. Thrailkill, Rules Coordinator for the Utah Division of Air Quality, do hereby certify that the public comment periods held to receive comments regarding R307-110-31 (DAR #43806) and R307-110-36 (DAR #43807) were held in accordance with the information provided in the published public notices and as defined in Utah Code 19-2-109. The changes regarding R307-204 were adopted by the Utah Air Quality Board on September 4, 2019.

Signed this 5 day of November 2019.

Liam O. Thrailkill

Digitally signed by Liam O. Thrailkill
DN: cn=Liam O. Thrailkill, o=Division of Air
Quality, ou, email=lthrailkill@utah.gov, c=US
Date: 2019.11.05 15:52:00 -07'00'



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Air Quality Board

Erin Mendenhall *Chair*
Cassady Kristensen, *Vice-Chair*
Kevin R. Cromar
Mitra Basiri Kashanchi
Randal S. Martin
Alan Matheson
Arnold W. Reitze Jr.
Michael Smith
William C. Stringer
Bryce C. Bird,
Executive Secretary

DAQ-090-18

UTAH AIR QUALITY BOARD MEETING

DRAFT AGENDA

Wednesday, January 2, 2019
195 North 1950 West, Salt Lake City, Utah 84116

Board Working Lunch – 11:30 a.m.
Four Corners Conference Rooms (4th Floor)

Staff update on the Division of Air Quality Compliance Program.

Board Meeting – 1:30 p.m.
Conference Room 1015 (1st Floor)

- I. Call-to-Order
- II. Date of the Next Air Quality Board Meeting: February 6, 2019
- III. Approval of the Minutes for November 7, 2018, Board Meeting.
- IV. Final Adoption: SIP Subsection IX.A.31: Control Measures for Area and Point Sources, Fine Particulate Matter, Serious Area PM_{2.5} SIP for the Salt Lake City, UT Nonattainment Area, as Amended. Presented by Bill Reiss.
- V. Final Adoption: Change in Proposed Rule R307-110-10. Section IX, Control Measures for Area and Point Sources, Part A, Fine Particulate Matter. Presented by Thomas Gunter.
- VI. Final Adoption: SIP Subsection IX. Part H: Emission Limits and Operating Practices. Specifically Requirements in Subparts H. 1, 2, 11, and 12, as Amended. Presented by Bill Reiss.
- VII. Final Adoption: Change in Proposed Rule, R307-110-17. Section IX, Control Measures for Area and Point Sources, Part H, Emission Limits. Presented by Thomas Gunter.
- VIII. Final Adoption: Change in Proposed Rule R307-511. Oil and Gas Industry: Associated Gas Flaring. Presented by Thomas Gunter.

DAQ-090-18

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IX. Informational Items.

- A. Regional Haze State Implementation Plan Amendment. Presented by Jay Baker.
- B. Air Toxics. Presented by Robert Ford.
- C. Compliance. Presented by Jay Morris and Harold Burge.
- D. Monitoring. Presented by Bo Call.
- E. Other Items to be Brought Before the Board.
- F. Board Meeting Follow-up Items.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources at (801) 536-4281, TDD (801) 536-4284 or by email at lwys@utah.gov.

ITEM 4



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-093-18

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Bill Reiss, Environmental Engineer

DATE: December 18, 2018

SUBJECT: FINAL ADOPTION: SIP Subsection IX.A.31: Control Measures for Area and Point Sources, Fine Particulate Matter, Serious Area PM_{2.5} SIP for the Salt Lake City, UT Nonattainment Area, as amended.

On December 14, 2009, EPA designated the Salt Lake City, UT PM_{2.5} Nonattainment Area. Utah was required to submit a Moderate Area nonattainment plan for the area that demonstrated either 1) attainment of the National Ambient Air Quality Standard (NAAQS) by an attainment date, established as December 31, 2015, or alternately 2) that attainment by such date was impracticable.

The Moderate Area plan submitted by Utah demonstrated the latter, and after the attainment date had arrived, EPA determined that the area did not meet the NAAQS. This finding led to a re-classification of the SLC PM_{2.5} nonattainment area from Moderate to Serious, and a new requirement for the State to submit a Serious Area State Implementation Plan (SIP) to the EPA.

A Serious Area SIP must include Best Available Controls Measures and Technologies (BACM /BACT) and a demonstration of attainment no later than 10 years after the year in which the area had been initially designated nonattainment, i.e., December 31, 2019.

The Division of Air Quality proposed its plan to address these requirements to the Board on September 5, 2018. The demonstration of attainment includes a modeled evaluation of the airshed with respect to emission reductions expected in time for 2019. It is supplemented by additional

DAQ-093-18

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information that comprises a weight of evidence that concludes the SLC nonattainment area will likely be able to demonstrate attainment of the 2006, 24-hour PM_{2.5} health standard by the attainment date of December 31, 2019.

The plan includes necessary elements to support the demonstration, control strategy, and implementation of the plan. These elements include emissions inventories, mobile source emission budgets, quantitative milestones which demonstrate reasonable further progress toward attainment, and contingency measures.

The BACM /BACT requirements (in Part H) for stationary point sources had been proposed already (on June 6, 2018) as an element that was “generally independent” of the attainment demonstration underlying the Serious Area SIP. Comments received on the earlier BACT requirements in Part H took issue with this stated disconnection from the broader SIP and its underlying attainment demonstration.

The point was later underscored during the proposal to release this Part A for public comment, and the Board responded by releasing, for public comment, alongside Part A.31, the original comment made in the context of Part H. This comment included a collection of modeling analyses demonstrating, for each of the PM_{2.5} Plan Precursors (NO_x, SO_x, VOC, and NH₃), that the emissions from existing major stationary sources located in the nonattainment area do not contribute significantly to PM_{2.5} levels that exceed the standard in the area.

The PM_{2.5} Implementation Rule allows that a state may elect to submit to the EPA one or more precursor demonstrations. If the State does submit such a demonstration to EPA and EPA approves the demonstration, then for the PM_{2.5} Plan Precursor(s) for which EPA has approved the demonstration, the state is not required to identify and evaluate potential control measures to reduce emissions from any existing major stationary sources.

A 30-day period of public review surrounding Part A, as well as the associated precursor demonstration comment, was held throughout the month of October. Numerous comments were received. They have been summarized and responded to in Attachment B to this memorandum. Certainly, many of the more significant comments surround the petition to incorporate the various major stationary source precursor demonstrations. Anticipating as much, DAQ had indicated it would independently evaluate the contribution made by existing major stationary sources to the PM_{2.5} levels addressed by this Serious Area SIP. DAQ’s (draft) analysis is included here as Attachment C, and informs its responses to these comments.

Additionally, Part H was re-proposed for public comment on October 3rd, and a 30-day period of public review was held for it throughout the month of November. Both Part A and Part H have been brought before the Board today for final adoption.

Most significantly, staff is recommending that Utah not elect to include any major stationary source PM_{2.5} precursor demonstration in its Serious Area SIP at this time. Furthermore, it is recommending that the emission limits and operating conditions articulated for major stationary sources in Part H not be made conditional on the approval by EPA of any such major stationary source precursor demonstration.

DAQ-093-18

Page 3

Staff Recommendation: Staff recommends that the Board adopt SIP Subsection IX.A.31: Control Measures for Area and Point Sources, Fine Particulate Matter, Serious Area PM_{2.5} SIP for the Salt Lake, UT Nonattainment Area, as amended.

Attachment A: Amended SIP Subsection IX. Part A.31: Control Measures for Area and Point Sources, Fine Particulate Matter, Serious Area PM_{2.5} SIP for the Salt Lake, UT Nonattainment Area.

Attachment B: Response to Comments Received During the Previous SIP Subsection IX. Part A Comment Period

Attachment C: “Draft UDAQ Major Stationary Source Precursor Demonstration for the Salt Lake City 24-hour PM_{2.5} Serious non-attainment Area”

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ATTACHMENT A

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3 **UTAH**

4 **State Implementation Plan**

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6 **Control Measures for Area and Point Sources, Fine**

7 **Particulate Matter,**

8 **Serious Area PM_{2.5} SIP for the Salt Lake City, UT**

9 **Nonattainment Area**

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11 **Section IX. Part A.31**

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28 **Adopted by the Utah Air Quality Board**

29 **, 2019**

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Acronyms

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2	BACT	Best Available Control Technology
3	CAA	Clean Air Act
4	CFR	Code of Federal Regulations
5	CAMx	Comprehensive Air Quality Model with Extensions
6	CTG	Control Techniques Guideline Documents
7	DAQ	Utah Division of Air Quality (also UDAQ)
8	EPA	Environmental Protection Agency
9	FRM	Federal Reference Method
10	MACT	Maximum Available Control Technology
11	MATS	Model Attainment Test Software
12	MPO	Metropolitan Planning Organization
13	MVEB	Motor Vehicle Emissions Budget
14	$\mu\text{g}/\text{m}^3$	Micrograms Per Cubic Meter
15	Micron	One Millionth of a Meter
16	NAAQS	National Ambient Air Quality Standards
17	NESHAP	National Emissions Standards for Hazardous Air Pollutants
18	NH_3	Ammonia
19	NO_x	Nitrogen Oxides
20	NSPS	New Source Performance Standard
21	NSR	New Source Review
22	PM	Particulate Matter
23	PM_{10}	Particulate Matter Smaller Than 10 Microns in Diameter
24	$\text{PM}_{2.5}$	Particulate Matter Smaller Than 2.5 Microns in Diameter
25	RACM	Reasonably Available Control Measures
26	RACT	Reasonably Available Control Technology
27	RFP	Reasonable Further Progress
28	SIP	State Implementation Plan
29	SMAT	Software for Model Attainment Test
30	SMOKE	Sparse Matrix Operator Kernel Emissions
31	SO_2	Sulfur Dioxide
32	SO_x	Sulfur Oxides
33	TSD	Technical Support Document
34	VOC	Volatile Organic Compounds
35	UAC	Utah Administrative Code
36	UWFPS	Utah Wintertime Fine Particulate Study
37	WRF	Weather Research and Forecasting

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Chapter 1 – INTRODUCTION AND BACKGROUND

1.1 Fine Particulate Matter

According to EPA's website, particulate matter, or PM, is a complex mixture of extremely small particles and liquid droplets. Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.

The size of particles is directly linked to their potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Other negative effects are reduced visibility and accelerated deterioration of buildings.

EPA groups particle pollution into two categories:

- "Inhalable coarse particles," such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Utah has previously addressed inhalable coarse particles as part of its PM₁₀ SIPs for Salt Lake and Utah Counties, but this fraction is not measured as PM_{2.5} and will not be a subject for this nonattainment SIP.
- "Fine particles," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller and thus denoted as PM_{2.5}. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air.

PM concentration is reported in micrograms per cubic meter or $\mu\text{g}/\text{m}^3$. The particulate is collected on a filter and weighed. This weight is combined with the known amount of air that passed through the filter to determine the concentration in the air.

1.2 Health and Welfare Impacts of PM_{2.5}

Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, for example;

- 1 • decreased lung function;
- 2 • aggravated asthma;
- 3 • development of chronic bronchitis;
- 4 • irregular heartbeat;
- 5 • nonfatal heart attacks; and
- 6 • pre-mature death in people with heart or lung disease.

7 People with heart or lung diseases, children and older adults are the most likely to be
8 affected by particle pollution exposure. However, even healthy people may experience
9 temporary symptoms from exposure to elevated levels of particle pollution.

10

11 1.3 Fine Particulate Matter in Utah

12 Excluding wind-blown desert dust events, wild land fires, and holiday related fireworks,
13 elevated PM_{2.5} in Utah occurs during the winter season when certain meteorological
14 conditions create stagnant cold pools of air.

15 During a winter-time cold pool episode, dispersion is very poor due to the very stable air
16 mass and PM_{2.5} emissions become trapped in the valley. Furthermore, emissions of
17 PM_{2.5} precursors react quickly to create secondary PM and overall concentrations of
18 primary and secondary PM_{2.5} become elevated.

19 Cold pool episodes persist until meteorological conditions change to once again allow for
20 good mixing. Episodes may last from a few days to tens of days.

21 The meteorological conditions that lead to the formation of cold pools in Utah's
22 nonattainment areas are: synoptic scale ridging, subsidence, light winds, snow cover
23 (often), and cool-to-cold surface temperatures. These conditions occur during winter
24 months, generally mid-November through early March.

25 The scenario described above leads to exceedances and violations of the 2006, 24-hour
26 health standard for PM_{2.5}. In other parts of the year concentrations are generally low, and
27 even with the high peaks incurred during winter, average concentrations are well within
28 the 2013, annual health standard for PM_{2.5}.

29

30 1.4 2006 NAAQS for PM_{2.5}

31 In September of 2006, EPA revised the (1997) National Ambient Air Quality Standards
32 (NAAQS) for PM_{2.5}. While the annual standard remained unchanged at 15 µg/m³, the
33 24-hr standard was lowered from 65 µg/m³ to 35 µg/m³.

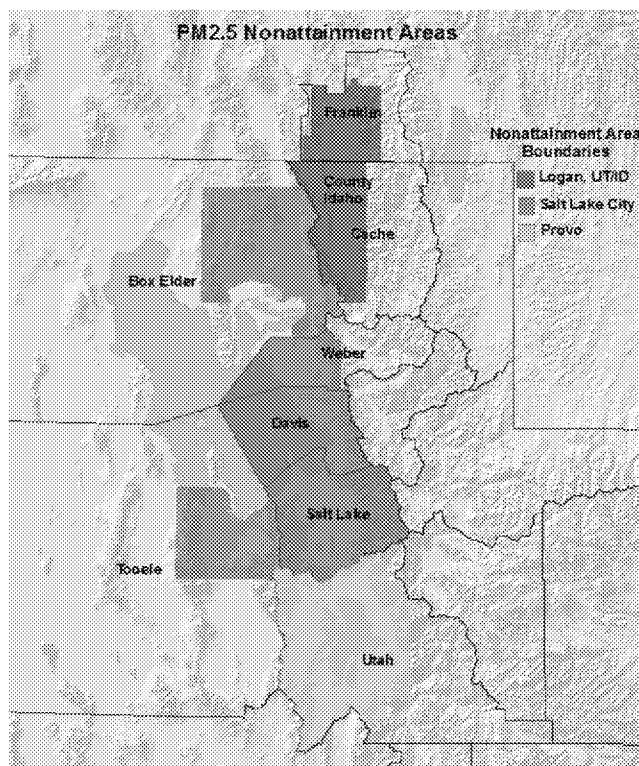
34 DAQ has monitored PM_{2.5} since 2000, and found that all areas within the state were in
35 compliance with the 1997 standards. However, using the new 2006 standard as the
36 benchmark, all or parts of five counties were found to be out of compliance with the 24-
37 hr standard.

1 In 2013, EPA lowered the annual average to $12 \mu\text{g}/\text{m}^3$. Monitoring data shows no
2 instances of noncompliance with this revised standard.
3
4
5

6 1.5 $\text{PM}_{2.5}$ Nonattainment Areas in Utah

7 There are three distinct nonattainment areas for the 2006, 24-hour $\text{PM}_{2.5}$ standard. These
8 are the Salt Lake City, UT, and Provo, UT nonattainment areas, which together
9 encompass what is referred to as the Wasatch Front. A third nonattainment area is more
10 or less geographically defined by the Cache Valley which straddles the border between
11 Utah and Idaho (the Logan, UT – ID nonattainment area.) **Figure 1.1** below shows the
12 geographic extent of these areas.

13 None of these three areas has violated the annual NAAQS for $\text{PM}_{2.5}$. Without exception,
14 the exceedances leading to 24-hr NAAQS violations are associated with relatively short-
15 term meteorological occurrences.



16
17 **Figure 1.1, Nonattainment Areas for the 2006, $\text{PM}_{2.5}$ 24-hr. NAAQS**
18

Each of these three areas was effectively designated as nonattainment on Dec. 14, 2009 by the EPA (74 FR 58688) based on weights of evidence belonging to the following nine factors:

- pollutant emissions
- air quality data
- population density and degree of urbanization
- traffic and commuting patterns
- growth
- meteorology
- geography and topography
- jurisdictional boundaries
- level of control of emissions sources

EPA also used analytical tools and data such as pollution roses, fine particulate composition monitoring data, back trajectory analyses, and the contributing emission score (CES) to evaluate these areas.

1.6 Reclassification to Serious

The EPA originally designated the Salt Lake City nonattainment area under the general provisions of CAA title I, part D, subpart 1 (“subpart 1”), under which attainment plans must provide for the attainment of a specific NAAQS (in this case, the 2006 PM_{2.5} standards) as expeditiously as practicable, but no later than five years from the date the areas were designated nonattainment (December 14, 2014).

On December 11, 2013, Utah submitted a SIP that contained multiple area source rules intended to reduce emissions in the area. Subsequently, on January 4, 2013, the U.S. Court of Appeals for the District of Columbia Circuit held that the EPA should have implemented the 2006 24-hour PM_{2.5} standard based on both the general nonattainment area requirements in subpart 1 and the PM-specific requirements of CAA title I, part D, subpart 4 (“subpart 4”). Under subpart 4, PM nonattainment areas are initially classified as Moderate, and Moderate area attainment plans must address the requirements of subpart 4 as well as subpart 1. Additionally, CAA subpart 4 establishes a different SIP submittal due date and attainment year. For a Moderate PM_{2.5} nonattainment area, the attainment SIP is due no later than 18 months after designation and the attainment year is as expeditiously as practicable after designation but no later than the end of the sixth calendar year after designation (December 31, 2015).

On June 2, 2014 (79 FR 31566), the EPA finalized the Identification of Nonattainment Classification and Deadlines for Submission of State Implementation Plan (SIP) Provisions for the 1997 Fine Particulate (PM_{2.5}) NAAQS and 2006 PM_{2.5} NAAQS (“the Classification and Deadlines Rule”). This rule classified the areas that were designated in 2009 as nonattainment to Moderate, and set the attainment SIP submittal due date for those areas at December 31, 2014. This rule did not affect the Moderate area attainment date of December 31, 2015.

After the court’s decision, the Utah Department of Air Quality (UDAQ) withdrew all prior Salt Lake City, UT PM_{2.5} SIP submissions and submitted a new SIP to address both

the general requirements of subpart 1 and the PM-specific requirements of subpart 4 for Moderate areas¹. The modeled attainment demonstration underlying the new Moderate Area SIP made its assessment concerning attainment by the applicable attainment date (December 31, 2015), and concluded that it would be impracticable to do so.

After reaching the statutory attainment date, the EPA is compelled to determine whether the area has or has not achieved compliance with the standard by evaluating the prior three years of quality assured data. That determination was published on May 10, 2017 (89 FR 21711) and concluded that the Salt Lake City nonattainment area did not reach attainment of the 2006 24-hour standard by its attainment date, and would therefore be effectively re-classified from a Moderate PM_{2.5} nonattainment area to a Serious PM_{2.5} nonattainment area as of June 9, 2017.

Under subpart 4 of the CAA, Serious PM nonattainment areas require, in addition to the provisions submitted to meet the Moderate area planning requirements, the submittal of a SIP revision that: 1) provides for attainment of the applicable NAAQS no later than the end of the 10th calendar year after the area's designation as nonattainment (December 31, 2019), and 2) includes provisions to assure that the Best Available Control Measures for the control of PM_{2.5} shall be implemented no later than four years after the date the area is re-classified as a Serious Area.

On August 24, 2016, the EPA finalized the Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements ("PM_{2.5} Implementation Rule"), 81 FR 58010, which addressed the January 4, 2013 court ruling. The final implementation rule provides the EPA's interpretation of the requirements applicable to PM_{2.5} nonattainment areas and explains how air agencies can meet the statutory SIP requirements that apply under subparts 1 and 4 to areas designated nonattainment for any PM_{2.5} NAAQS. These statutory requirements are further addressed in Chapter 2.

1.7 PM_{2.5} Precursors

The majority of ambient PM_{2.5} collected during a typical cold-pool episode of elevated concentration is secondary particulate matter, born of gaseous precursor emissions. PM_{2.5} precursors include sulfur dioxide (SO₂), oxides of nitrogen (NO_x), volatile organic compounds (VOC), and ammonia (NH₃).

Clean Air Act Section 189(e) requires that the control requirements applicable in plans for major stationary sources of PM₁₀ shall also apply to major stationary sources of PM₁₀ precursors, except where the Administrator determines that such sources do not contribute significantly to PM₁₀ levels which exceed the standard in the area.

The new PM_{2.5} Implementation Rule interprets this requirement as it applies to PM_{2.5}. As part of this rule, a state may elect to submit one or more demonstrations to assert that reducing the emission level of a particular precursor will not result in a significant benefit to the area in terms of PM_{2.5} concentrations. Generally speaking, if a state elects to do so and the EPA subsequently approves the demonstration, the state would not be required to include emission controls for that precursor in its SIP control strategy.

¹ The Moderate Area SIP for the Salt Lake City, UT PM_{2.5} nonattainment area was adopted by the Utah Air Quality Board on December 3, 2014 and submitted to the EPA on December 22, 2014. The narrative appears in the SIP at Section IX.A.21 and the Emission Limits and Operating Practices which apply to specific stationary sources located in the nonattainment area are listed in Section IX. Part H. 11 and 12.

1 Utah has not included any such demonstration with this Serious Area SIP submittal. As
2 such, the requirement to ensure the implementation of best available control measures
3 applies to emissions of PM_{2.5} and to each of the four PM_{2.5} precursors listed above. As
4 such, each of these PM_{2.5} precursors is also defined as a PM_{2.5} plan precursor within the
5 Salt Lake City, UT PM_{2.5} nonattainment area.
6

Chapter 2 – REQUIREMENTS FOR 2006, PM_{2.5} PLAN REVISIONS

2.1 Requirements for Nonattainment SIPs

Section 110 of the Clean Air Act lists the requirements for implementation plans. Many of these requirements speak to the administration of an air program in general. Section 172 of the Act contains the plan requirements for nonattainment areas in general.

The Clean Air Act also contains provisions, at Subpart 4 of Part D, that apply specifically to PM₁₀ nonattainment areas. On January 4, 2013, D.C. Circuit Court of Appeals found that these provisions should also apply to PM_{2.5} nonattainment areas.

Under Subpart 4, nonattainment areas for particulate matter may carry the classification of either moderate or serious. Addressed therein are the attainment dates and planning provisions for both moderate and serious areas. Of note is that the planning requirements for serious areas are *in addition to* those required for moderate areas.

EPA's new PM_{2.5} Implementation Rule interprets the requirements of Subpart 4 as they apply to PM_{2.5}. In particular, this rulemaking (81 FR 58010) recodifies Subpart Z of 40 CFR Part 51 ("Provisions for Implementation of PM_{2.5} National Ambient Air Quality Standards") which had been revoked as part of the January 4, 2013 Court ruling. Subpart Z details what is required of plan revisions addressing both moderate and serious PM_{2.5} nonattainment areas.

Utah has already addressed the moderate area planning requirements in the SIP it adopted on December 3, 2014. This SIP will now address the serious area requirements as articulated in Subpart Z.

This Serious Area implementation plan was developed to meet the requirements specified in the law, rule, and appropriate guidance documents identified above. Some of the more notable requirements that pertain to this SIP include:

- A demonstration, including air quality modeling, that the plan provides for attainment of the applicable NAAQS no later than the end of the 10th calendar year after the area's designation as nonattainment (December 31, 2019)
- A comprehensive base-year inventory of actual emissions as well as a projected inventory of emissions in the attainment year
- Provisions for the implementation of Best Available Control Measures including Technologies (BACM / BACT) no later than 4 years after the date the area is re-classified as a Serious Area
- Enforceable emission limits as well as schedules for compliance
- Transportation Conformity, including motor vehicle emission budgets
- Quantitative Milestones that demonstrate Reasonable Further Progress (RFP) toward attainment of the National Ambient Air Quality Standards by the applicable attainment date
- Contingency measures to be undertaken if the area fails to make reasonable further progress or attain the NAAQS by the applicable attainment date

- 1 Additional information is provided in the technical support document (TSD).
- 2

1 Chapter 3 – Ambient Air Quality Data

2 3.1 Measuring Fine Particle Pollution in the Atmosphere

3 Utah has monitored PM_{2.5} in its airsheds since 2000, following the promulgation of the
4 1997, PM_{2.5} NAAQS which was set at 65 µg/m³ for a 24-hour averaging period. PM_{2.5}
5 concentrations, especially during Utah's wintertime cold pool episodes, tend to be
6 regionally homogenous within a specific airshed. This means that just a few monitors
7 can adequately determine compliance with the NAAQS for these airsheds. UDAQ's
8 monitors are appropriately located to assess concentration, trends, and changes in PM_{2.5}
9 concentrations. During Utah's wintertime temperature inversions, every day sampling
10 and real time monitoring are needed public notification and for subsequent air quality
11 modeling.

12 3.2 Utah's Air Monitoring Network

13 The Air Monitoring Section maintains an ambient air monitoring network in Utah that
14 collects both air quality and meteorological data. **Figure 3.1** shows the location of sites
15 along the Wasatch Front and in the Cache Valley that collect PM_{2.5} data.
16 Data collected at three of the sites along the Wasatch Front is analyzed to determine the
17 various species of PM_{2.5} that collectively make up the total mass. Particulate matter
18 collected on the speciation filters is analyzed for organic and inorganic carbon and a list
19 of 48 elements. PM_{2.5} speciation data is particularly useful in helping to identify sources
20 of particulate matter.
21 The ambient air quality monitoring network along Utah's Wasatch Front and in the
22 Cache Valley is routinely audited by the EPA, and meets the agency's requirements for
23 air monitoring networks.

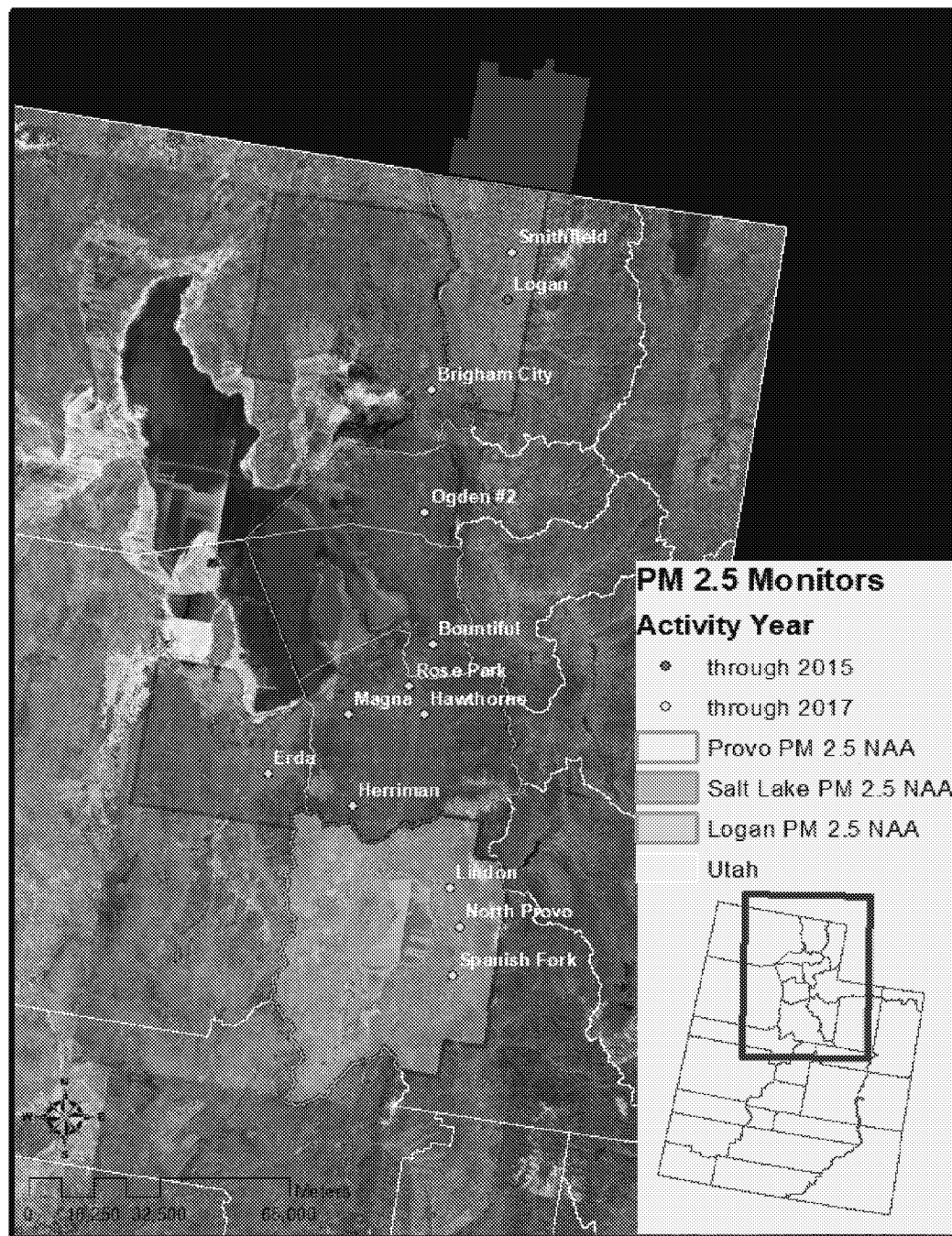


Figure 3.1, Utah's PM_{2.5} Air Monitoring Network

3.3 Data Handling

PM_{2.5} collected on filter media must be weighed and calibrated in order that a concentration may be determined for a 24-hour period. Once determined, the data is entered into a database maintained by the EPA (called AQS). In order to be used for regulatory purposes, data determined from filters must include verification that it was handled in accordance with certain quality assurance specifications; among these are appropriate ranges of temperature and relative humidity (RH) within which the processing must take place. A routine audit of Utah's air quality data collected from 2013 - 2015 identified numerous instances for which the temperature and RH parameters were either not recorded at all or were recorded outside of their specified range. It appeared, therefore, that this data could not be used for regulatory purposes. Particularly important was data collected in 2015, one of the years used to construct a monitored design value for this SIP.

The form of the PM_{2.5} NAAQS takes into consideration the percentage of data captured throughout each calendar quarter. There is a general expectation that at least 75% of the data scheduled for collection will actually be captured. The degree of data capture affects what value will be entered into the AQS database for comparison with the NAAQS. If data capture is poor, a higher more conservative value will be selected for use, particularly with respect to the 24-hour value denoted as the 98th percentile.

Further investigation into the suspect temperature and RH values identified the problem as a software error that affected the recording of the values measured by the filter robot rather than the values themselves. Data handling procedures allow for the substitution of temperature and RH data from other sources, and by substituting the temperature and RH data from instruments situated in the room within which the filter robot operates, UDAQ has been able to recover most of the suspect filter data from 2015. The entire problem had been rectified by 2016.

The number of filters recovered from the 2015 data record sits at four or five hundred. Priority was given to those filters that most directly affected this SIP. Still, there are more filters that UDAQ would like to recover, and this work will continue for some time after this SIP has been completed. This means that there will continue to be some discrepancies between the PM_{2.5} values reported herein and the values one may access in the AQS database. In order that a filter becomes fully recovered, EPA must remove a (null) code associated with each filter record.

Another reason the PM_{2.5} values reported in this SIP may not match the values appearing in AQS concerns data flagged by UDAQ resulting from an exceptional event. Until EPA affixes a second flag indicating that it has concurred with UDAQ's assertion, the data will be considered useful for regulatory purposes. This will be discussed further in Chapter 6.

3.4 Annual PM_{2.5} – Mean Concentrations

The procedure for evaluating PM_{2.5} data with respect to the NAAQS is specified in Appendix N to 40 CFR Part 50. Generally speaking, the annual PM_{2.5} standard is met when a three-year average of annual mean values is less than or equal to 12.0 µg/m³. Each annual mean is itself an average of four quarterly averages.

Table 3.1, below shows the mean values for 2015, 2016, and 2017. These are the years surrounding 2016, the year for which the baseline modeling inventory was prepared. It also shows the 3-year average of those values, as a comparison against the NAAQS for each of Utah's monitoring locations. All locations are in compliance with the annual NAAQS.

Location	County	Annual Mean Values (µg/m ³)			3-Yr Average (µg/m ³)
		2015	2016	2017	
Logan	Cache	7.3			7.3
Smithfield	Cache	5.5	7.6	7.9	7.0
Brigham City	Box Elder	5.6	7.4	8.5	7.1
Ogden 2	Weber	9.7	9	7.3	8.6
Bountiful	Davis	6.5	8	9	7.8
Magna	Salt Lake	7.1	7.1	7.3	7.1
Hawthorne	Salt Lake	7.4	7.9	8.2	7.8
Rose Park	Salt Lake	8.7	9.4	7.8	8.6
Herriman 3	Salt Lake		4.6	5.7	5.1
Erda	Tooele		6.3	6.5	6.4
North Provo	Utah	7	8.2	5	6.7
Lindon	Utah	7.4	8.8	8.4	8.2
Spanish Fork	Utah	6.5	7.4	7.3	7.0

Table 3.1, PM_{2.5} Annual Mean Concentrations

3.5 24-hour PM_{2.5} – Averages of 98th Percentiles and Monitored Design Values

The procedure for evaluating PM_{2.5} data with respect to the NAAQS is specified in Appendix N to 40 CFR Part 50. Generally speaking, the 24-hr. PM_{2.5} standard is met when a 3-year average of 98th percentile values is less than or equal to 35 µg/m³. Each year's 98th percentile is the daily value beneath which 98% of all daily values would fall. Table 3.2, below shows the 98th percentile values for 2015, 2016, and 2017. These are the years surrounding 2016, the year for which the baseline modeling inventory was prepared. It also shows the 3-year average of those values, as a comparison against the NAAQS for each of Utah's monitoring locations. It can be seen from the data that the 24-hr. NAAQS is violated at the Rose Park monitoring location. This SIP has been structured to specifically address the 24-hr. standard.

It is important to note that the data in **Tables 3.1 and 3.2** excludes several values from 2017, at certain stations, that were flagged by UDAQ as having been affected by wildland fire or fireworks. UDAQ expects that EPA will eventually concur with UDAQ's flags,

1 thereby excluding them from regulatory use. Two such values were measured at Rose
 2 Park, and would therefore affect the 98th percentile value for that year. No exceptional
 3 events were flagged at the Hawthorne site. EPA has indicated to UDAQ that it is
 4 appropriate to exclude these values from the design values calculated in this SIP.

Location	County	98th Percentile Values (µg/m3)			3-Yr Average (µg/m3)
		2015	2016	2017	
Logan	Cache	29.0			29.0
Smithfield	Cache	28.9	34.0	36.0	32.9
Brigham City	Box Elder	26.7	34.8	34.4	31.9
Ogden 2	Weber	32.9	39.0	25.3	32.4
Bountiful	Davis	29.2	24.7	35.2	29.7
Magna	Salt Lake	22.9	30.7	30.1	27.9
Hawthorne	Salt Lake	28.8	38.4	35.7	34.3
Rose Park	Salt Lake	33.3	43.2	32.4	36.3
Herriman 3	Salt Lake		24.9	28.2	26.5
Erda	Tooele		25.1	20.5	22.8
North Provo	Utah	25.0	36.6	21.9	27.8
Lindon	Utah	27.3	36.3	27.6	30.4
Spanish Fork	Utah	28.1	29.2	27.6	28.3

6 **Table 3.2, 24-hour PM_{2.5} Monitored Design Values**

7 As mentioned in the foregoing paragraph, this SIP is structured to address the 24-hr.
 8 PM_{2.5} NAAQS. EPA's modeling guidance² prescribes a modeled attainment test that
 9 includes a monitored baseline design value for each monitoring location. It notes that the
 10 design values should be consistent with the form of the applicable NAAQS. The 24-hour
 11 PM_{2.5} NAAQS is based on a 3-year average of 98th percentile values. The modeling
 12 guidance suggests several possible methodologies to calculate baseline design values,
 13 including a 3-year average that coincides with the years used to designate the area to
 14 nonattainment as well as a 3-year average that straddles the baseline inventory year. In
 15 this case, the area was designated as nonattainment in 2006, too long ago for those years
 16 to still be considered representative. However, the three years used to construct the
 17 design values (2015 – 2017) straddle the baseline inventory year (2016) and include
 18 2015, one of the years used to reclassify the area from moderate to serious.

² Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze (EPA -454B-07-002, April 2007)

3.6 Composition of Fine Particle Pollution – Speciated Monitoring Data

DAQ operates three PM_{2.5} speciation sites. The Hawthorne site in Salt Lake County is one of 52 Chemical Speciation Network sites (CSN) operated nationwide on an every-third-day sampling schedule. Sites at Bountiful/Viewmont in Davis County and Lindon in Utah County are State and Local Air Monitoring Stations (SLAMS) PM_{2.5} speciation sites that operate on an every-sixth-day sampling schedule.

Filters are prepared by the EPA contract laboratory and shipped to Utah for sampling. Samples are collected for particulate mass, elemental analysis, identification of major cations and anions, and concentrations of elemental and organic carbon as well as crustal material present in PM_{2.5}. Carbon sampling and analysis changed in 2007 to match the Interagency Monitoring of Protected Visual Environments (IMPROVE) method using a modified IMPROVE sampler at all sites.

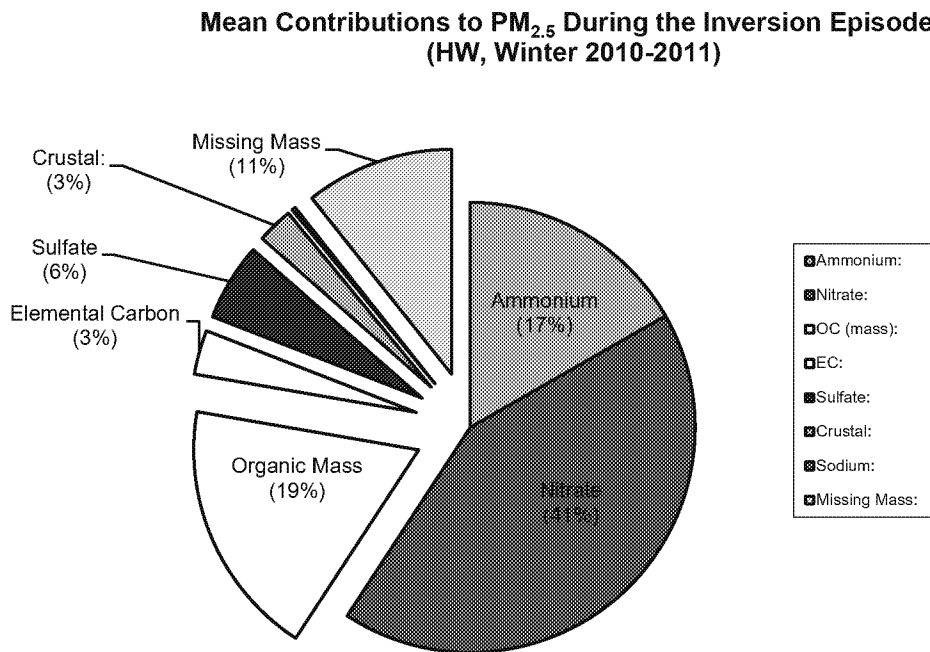
The PM_{2.5} is collected on three types of filters: Teflon, nylon, and quartz. Teflon filters are used to characterize the elemental content of PM_{2.5}. Nylon filters are used to quantify the amount of major inorganic ions, and quartz filters are used to quantify the organic and elemental carbon content in the ambient PM_{2.5}.

Data from the speciation network show the importance of volatile secondary particulates, particularly ammonium nitrate, during the colder months. A significant number of these particles are lost in FRM PM_{2.5} sampling.

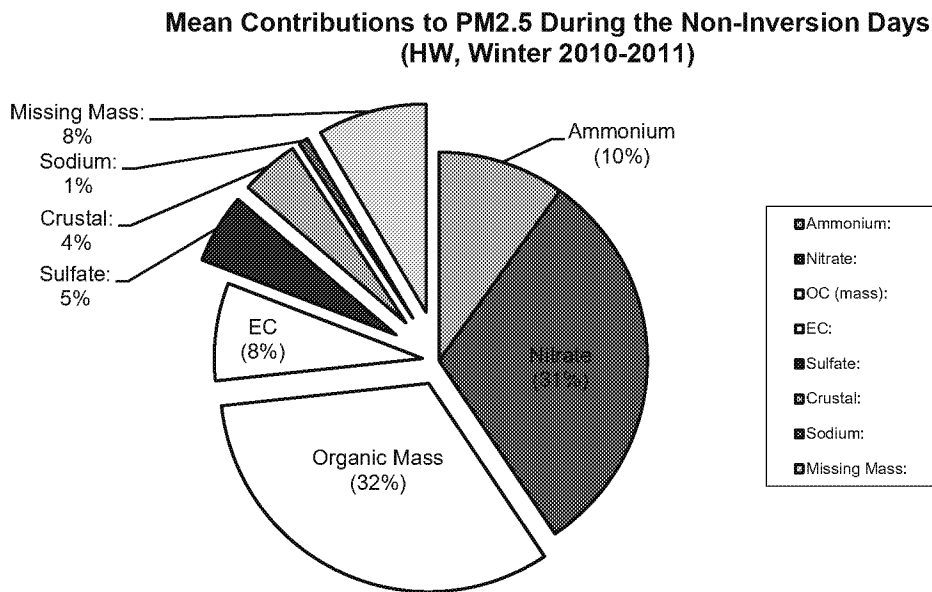
During the winter periods between 2009 and 2011, UDAQ conducted special winter speciation studies aimed at better characterization of PM_{2.5} during the high pollution episodes. These studies were accomplished by shifting the sampling of the Chemical Speciation Network monitors to 1-in-2-day schedule during the months of January and February. Speciation monitoring during the winter high-pollution episodes produced similar results in PM_{2.5} composition each year.

The results of the speciation studies led to the conclusion that the exceedances of the PM_{2.5} NAAQS are a result of the increased portion of the secondary PM_{2.5}, mainly ammonium nitrate, that was chemically formed in the air and not primary PM_{2.5} emitted directly into the troposphere.

1 **Figure 3.2** below shows the contribution of the identified compounds from the speciation
2 sampler both during a winter temperature inversion period and during a well-mixed
3 winter period.
4



5



6

7 **Figure 3.2, Composite Wintertime PM_{2.5} Speciation Profiles**

3.7 Utah Winter Fine Particulate Study (UWFPS)

The Utah Winter Fine Particulate Study aimed to address the scientific uncertainties surrounding winter $PM_{2.5}$ pollution. The study took place during the winter of 2017, during which NOAA's specially equipped light aircraft known as the Twin Otter flew over the Cache, Salt Lake, and Utah valleys to survey the chemical conditions responsible for the formation of $PM_{2.5}$. This study was a collaborative project between scientists from the Division of Air Quality, the National Oceanic and Atmospheric Administration (NOAA) Earth System Research Laboratory (ESRL) and the Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder, the Environmental Protection Agency (EPA), United States Department of Agriculture (USDA), University of Utah, University of Washington, University of Toronto, University of Minnesota, Utah State University, and Brigham Young University. The survey looked to investigate the chemistry, transport, and spatial and vertical distribution of species relevant to particulate formation. Seven multi-day pollution episodes with elevated $PM_{2.5}$ were observed during 2016 – 2017 winter. Two dominating episodes with multiple NAAQS exceedances occurred during the UWFPS period, providing an opportunity to study the chemical and meteorological conditions during and outside pollution episodes in different environments and examine the temporal, spatial, and vertical variability of chemical conditions. Consistent with prior studies ammonium nitrate was found to dominate the $PM_{2.5}$ mass. One of the main questions with respect to ammonium nitrate is the attribution of the limiting reagents in each of the three valleys. The study found that Cache Valley is nitrate limited, while Salt Lake and Utah Valleys are predominately nitrate limited, but also may have periods where they are ammonium limited. Salt Lake Valley is the least nitrate limited and often is ammonium limited later in a persistent cold air pool episode. Additionally, during the study high time resolution ammonia measurements were taken aboard the Twin Otter in Cache Valley, and some limited continuous ammonia measurements were taken along the Wasatch Front. Passive ammonia measurements were also collected in all three valleys in Utah. Ammonia concentrations were generally found to be much higher in the Cache valley compared to the Wasatch Front, and ammonia levels in the Salt Lake Valley were on average lower than in Utah Valley. This high level of spatial variability is in disagreement with the current inventory which shows comparable inventories for Cache, Utah, and Salt Lake Counties, indicating a potential misrepresentation of ammonia sources in the inventory. These same spatial discrepancies were not seen for the nitrogen oxide emissions inventory³. While limited, VOCs and halogens measurements were also collected during this study. These measurements highlighted the important role of VOCs and halogens in wintertime $PM_{2.5}$ formation and provided information on their potential sources. VOCs and halogens, particularly nityrl

³Baasandorj, M., Brown, S., Hoch, S., Crosman, E., Long, R., Silva, P., . . . Eatough, D. (2018). 2017 Utah Winter Fine Particulate Study Final Report. Retrieved from <https://documents.deq.utah.gov/air-quality/planning/technical-analysis/research/northern-utah-airpollution/utah-winter-fine-particulate-study/DAQ-2018-004037.pdf>

1 chloride (ClNO_2), act as radical sources important for the photochemical production of
2 $\text{PM}_{2.5}$.

3 The chemical pathway where ClNO_2 is formed through the heterogeneous uptake of N_2O_5
4 on chloride-containing particles is also particularly active in the Salt Lake Valley. HCl
5 also plays an important role in $\text{PM}_{2.5}$ formation. In the presence of excess ammonia, HCl
6 will partition to aerosol particles forming ammonium chloride, with ammonium chloride
7 accounting for up to 15% of $\text{PM}_{2.5}$ mass during high wintertime $\text{PM}_{2.5}$ pollution
8 episodes⁴.

9 While the UWFPS has shed light on many questions surrounding $\text{PM}_{2.5}$ formation,
10 continued research and further analysis of the collected data is needed to reach more
11 definitive findings regarding sources and processes leading to winter fine particulate
12 matter in northern Utah and elsewhere.

13
14
15

⁴Kelly, K.E., R. Kotchenruther, R. Kuprov, and G.D. Silcox, Receptor model source attributions for Utah's Salt Lake City airshed and the impacts of wintertime secondary ammonium nitrate and ammonium chloride aerosol. *Journal of the Air & Waste Management Association*, 2013. 63(5): p. 575-590.

Chapter 4 – EMISSION INVENTORY DATA

4.1 Introduction

The emissions inventory is one means used by the state to assess the level of pollutants and precursors released into the air from various sources. The methods by which emissions inventories are collected and calculated are constantly improving in response to better analysis and more comprehensive rules. The inventories underlying this SIP were compiled using the best information available.

The sources of emissions that were inventoried may be discussed as belonging to four general categories: industrial point sources; on-road mobile sources; off-road mobile sources; and area sources which represent a collection of smaller, more numerous point sources, residential activities such as home heating, and in some cases biogenic emissions.

This SIP is concerned with PM_{2.5}, both primary in its origin and secondary, referring to its formation removed in time and space from the point of origin for certain precursor gasses. Hence, the pollutants of concern for inventory development purposes included PM_{2.5}, SO₂, NO_x, VOC, and NH₃.

On-road mobile sources are inventoried using EPA's MOVES2014a model, in conjunction with information generated by travel demand models such as vehicle speeds and miles traveled. The inventory information is calculated in units of tons per day, adjusted for winter conditions. Emissions from the other three categories are calculated in terms of tons per year.

Prior to use in the air quality model, the emissions are pre-processed to account for the seasonality of Utah's difficulty with secondary PM_{2.5} formation during winter months. These temporal adjustments also account for daily and weekly activity patterns that affect the generation of these emissions.

EPA's PM_{2.5} Implementation Rule requires that the emission values shall be either: annual total emissions, average-season-day, or both, as appropriate for the relevant PM_{2.5} NAAQS.

Utah's long-running difficulties with fine PM may be characterized as a short-term (24-hour NAAQS) problem belonging to the winter months when meteorological conditions are conducive to the both the trapping of air in the valleys due to temperature inversions and to the secondary formation of PM_{2.5}. SIP analyses inventories have historically been adjusted to reflect this seasonality.

"Average-season-day emissions" are defined, in 40 CFR 51.1000, as the sum of all emissions during the applicable season divided by the number of days in that season. Again, Utah's inventory is compiled using a variety of different averaging periods. The inventory is then gridded into the air model, using a pre-processor called SMOKE, along with an hourly temporal component for each 24 hour period. Emissions may then be extracted from SMOKE and reported in consistent time averaged units of "tons-per-day". Each projection of the emissions inventory will be modeled with meteorology reflecting the actual episode used to validate the air quality model. This episode, spanning 11 days, was incurred from Friday, December 31 through Monday, January 10, 2011.

1 Thus, Utah's SIP will report, in its narrative, average-season-day emissions, with the
2 definition of season spanning the 2011 episode. Original EI calculations will be included
3 as part of the Technical Support Document (TSD).

4 There are various time horizons that are significant to the development of this SIP. It is
5 first necessary to look at actual emissions incurred during past episodes of elevated PM_{2.5}
6 concentrations in order to develop the air quality model. The episodes studied as part of
7 the SIP occurred in 2011, 2013, and 2016. It is then necessary to look several years into
8 the future when developing emission control strategies. The significant time horizon for
9 this plan relates to the statutory attainment date, December 31, 2019. A projected
10 inventory is prepared for 2019 and then compared with a baseline inventory that is
11 contemporaneous with the monitored design values discussed in Section 3.4. In this case
12 the baseline is represented by the year 2016. In addition, it will be necessary to evaluate
13 progress towards attainment by looking at specific milestone years. In this case there are
14 two significant mileposts; 2017 and 2020. Inventories must be prepared to evaluate all of
15 these time horizons.

16 4.2 The 2014 Emissions Inventory

17 The forgoing paragraph identified numerous points in time for which an understanding of
18 emissions to the air is important to plan development. The basis for each of these
19 assessments was the 2014 tri-annual inventory. This inventory represented, at the time it
20 was selected for use, the most recent comprehensive inventory compiled by UDAQ. In
21 addition to the large major point sources that are required to report emissions every year,
22 the tri-annual inventories consider emissions from many more, smaller point sources.
23 These inventories are collected in accordance with state and federal rules that ensure
24 proper methods and comprehensive quality assurance.

25 Thus, to develop other inventories for each of the years discussed above, the 2014
26 inventory was either back-cast and adjusted for certain episodic conditions, or forecast to
27 represent more typical conditions.

28 4.3 Geographic Area: Nonattainment Areas and Modeling 29 Domain

30 As said at the outset, an emissions inventory provides a means to assess the level of
31 pollutants and precursors released into the air from various sources. This in turn allows
32 for an overall assessment of a particular airshed.

33 The modeling analysis used to support this SIP considers a regional domain that
34 encompasses three distinct airsheds belonging to three distinct PM_{2.5} nonattainment areas;
35 The Cache Valley (the Logan UT/ID nonattainment area), the central Wasatch Front (Salt
36 Lake City, UT nonattainment area), and the southern Wasatch Front (Provo, UT
37 nonattainment area).

38 Within each nonattainment area greater attention will be given to the accuracy of the
39 inventories. For example, point sources will be included at a threshold of 70 tons per
40 year inside these areas, while outside the threshold will be 100 tpy. On-road mobile

1 source emissions will make use of travel demand models in the nonattainment areas to
2 make projections of Vehicle Miles Traveled. This is not possible in the outlying areas.
3 The actual modeling domain will encompass a much greater geographical area to ensure
4 that all pollutants, including short-range transported pollutants, are included in the
5 modeling process. This additional area encompasses the remaining 22 counties in Utah
6 and some additional areas in Nevada, Arizona, New Mexico, Colorado, Wyoming, and
7 Idaho. See **Figure 6.1 in Chapter 6**.

8 In some ways, these outlying areas will be inventoried at a lesser level of detail than the
9 non-attainment areas. UDAQ will compile information directly for all areas of the state.
10 By source category, this includes Point Sources, Area Sources, and Mobile Sources (both
11 on-road and off). By contrast, UDAQ will import National Emissions Inventory (NEI)
12 data from the EPA's website to fill in the outlying areas in other states.

13 The inventories developed for each of these three areas illustrate many similarities but
14 also a few notable differences. All three areas are more or less dominated by a
15 combination of on-road mobile and area sources. However, emissions from large point
16 sources are non-existent in the Cache Valley. These emissions are mostly situated along
17 the Wasatch Front, and primarily exhibited in the Salt Lake City nonattainment area.
18 Conversely, most of the agricultural emissions are located in the Cache Valley.
19

Table 4.1 is specific to the Salt Lake City, UT nonattainment area, and shows actual emissions for the baseline year (2016), as well as projected emissions for the attainment year (2019), and each of two “milestone years” (2017 and 2020). All projections incorporate assumptions concerning growth in population and vehicle miles traveled. They also include the effects of emissions control strategies that are either already promulgated or will be required as part of the SIP. Emissions modeled for the remainder of the modeling domain are contained in the Technical Support Document.

Emissions [tons/day]	Sector	PM _{2.5}	NO _x	VOC	NH ₃	SO ₂
2016 Base Year	Area Sources	6.13	13.63	45.96	14.22	0.17
	Mobile Sources	4.98	55.38	31.84	1.29	0.41
	NonRoad Sources	1.01	16.41	8.70	0.02	0.32
	Point Sources	3.26	18.18	5.25	0.44	4.70
	Total	15.38	103.61	91.74	15.97	5.60
2017 Milestone Year	Area Sources	6.19	13.57	46.02	14.21	0.22
	Mobile Sources	5.02	52.53	30.87	1.30	0.43
	NonRoad Sources	0.96	15.77	8.47	0.02	0.33
	Point Sources	3.58	18.32	6.13	0.44	4.61
	Total	15.75	100.18	91.48	15.97	5.59
2019 Attainment Year	Area Sources	6.23	11.84	44.34	14.21	0.22
	Mobile Sources	4.78	44.02	27.26	1.25	0.43
	NonRoad Sources	0.88	15.18	9.01	0.02	0.35
	Point Sources	4.25	23.86	6.21	0.48	3.90
	Total	16.13	94.90	86.82	15.96	4.89
2020 Milestone Year	Area Sources	6.24	9.54	43.73	14.20	0.20
	Mobile Sources	4.68	40.38	25.42	1.23	0.42
	NonRoad Sources	0.82	14.08	8.10	0.02	0.36
	Point Sources	4.26	23.86	6.22	0.49	3.90
	Total	16.00	87.86	83.47	15.94	4.88

Table 4.1, Emissions Summaries for the Salt Lake City, UT PM_{2.5} Nonattainment Area; Baseline, Milestone and Attainment Years (SMOKE). Emissions are presented in tons per average-episode-day.

All estimates are calculated from the Sparse Matrix Operator Kernel Model (SMOKE) and presented in units of tons per average-episode-day. More detailed inventory information may be found in the Technical Support Document (TSD).

Table 4.2 is specific to the point sources located within the Salt Lake, UT nonattainment area, and shows actual emissions for the baseline year (2016), as well as projected emissions for the attainment year (2019), and each of two “milestone years” (2017 and 2020). All projections incorporate assumptions concerning growth and also include the effects of emissions control strategies that are either already promulgated or will be required as part of the SIP.

Site Name	2016 Emissions					2017 Emissions				
	PM _{2.5} (tons/yr)	SO _x (tons/yr)	NO _x (tons/yr)	VOC (tons/yr)	NH ₃ (tons/yr)	PM _{2.5} (tons/yr)	SO _x (tons/yr)	NO _x (tons/yr)	VOC (tons/yr)	NH ₃ (tons/yr)
*ACH Foam Technologies	0.05	0.00	0.67	75.82	0.00	0.05	0.00	0.67	75.82	0.00
ATK Launch Systems - Promontory	19.13	1.86	44.84	31.18	0.44	19.13	1.86	44.84	31.18	0.44
Big West Oil - Flying J Refinery	10.64	43.14	92.31	307.37	4.37	10.64	43.14	92.31	307.37	4.37
*Bimbo Bakeries USA Salt Lake City Plant	0.20	0.02	2.64	79.44	0.08	0.20	0.02	2.64	79.44	0.08
*Brigham Young University- Main Campus	3.35	117.92	151.21	5.07	0.54	3.35	117.92	151.21	5.07	0.54
Chevron Products Co - Salt Lake Refinery	33.99	23.62	260.87	304.98	8.90	33.99	23.62	260.87	304.98	8.90
Compass Minerals Ogden Inc. - Production Plant	80.50	9.81	134.50	72.82	3.61	80.50	9.81	134.50	72.82	3.61
*Geneva Nitrogen Inc. - Geneva Nitrogen Plant	28.28	0.00	109.14	0.02	2.70					
Hexcel Corporation- Salt Lake Operations	72.96	37.80	169.38	163.81	84.98	70.99	42.42	175.58	161.43	85.53
Hill Air Force Base - Main Base	8.45	4.01	151.42	126.36	1.45	26.10	34.14	283.95	306.86	1.45
Holly Corp- HRMC and HEP Woods Cross Operations	13.27	109.96	181.71	157.86	17.82	13.27	109.96	181.71	157.86	17.82
Kemecott Utah Copper LLC- Mine & Copperton Concentrator	274.05	1.99	4,199.63	213.70	1.75	274.05	1.99	4,199.63	213.70	1.75
Kemecott Utah Copper LLC- Power Plant Lab Tailings Impoundment	71.78	1,500.34	1,322.52	8.21	0.24	49.90	914.68	652.45	6.17	0.17
Kemecott Utah Copper LLC- Smelter & Refinery	421.19	704.35	160.21	10.37	5.62	421.19	704.35	160.21	10.37	5.62
Lhoist North America - Grantsville Plant	0.25	0.02	0.21	0.14	0.00	0.25	0.02	0.21	0.14	0.00
McWane Ductile - Utah	13.34	3.90	38.60	29.55	0.50	13.34	3.90	38.60	29.55	0.50
Nucor Steel- Nucor Steel	37.47	135.01	156.77	31.72	1.92	33.27	85.63	200.09	36.46	2.11
PacificCorp Energy- Gadsby Power Plant	16.86	1.52	117.39	9.57	13.15	16.86	1.52	117.39	9.57	13.15
PacificCorp Energy- Lake Side Power Plant	58.39	10.58	246.67	38.59	152.04	58.39	10.58	246.67	38.59	152.04
Procter and Gamble-Paper Manufacturing Plant	38.94	0.30	27.23	18.58	0.17	150.15	1.45	124.86	162.37	0.17
*Snowbird Development Corporation	3.52	1.48	93.33	12.11	0.64	3.52	1.48	93.33	12.11	0.64
Tesoro Refining & Marketing Company LLC	89.35	544.38	360.09	249.28	3.77	89.35	544.38	360.09	249.28	3.77
University of Utah- University of Utah facilities	15.28	0.80	73.25	10.49	3.38	15.23	0.80	73.04	10.46	3.37
Utah Municipal Power Agency - West Valley Power Plant	3.94	0.36	8.55	1.25	0.00	3.94	0.36	8.55	1.25	0.00
Vulcraft - Division of Nucor Corporation- Steel Products Manufacturing	9.68	0.50	6.68	44.91	0.04	9.87	0.53	7.10	48.29	0.04
*Wasatch Integrated Waste Mgt District- County Landfill & Energy Recovery Facility (DCERF)	9.79	17.16	236.44	23.18	0.00					
Total =	1,334.65	3,270.83	8,346.25	2,026.36	308.12	1,397.53	2,654.57	7,610.50	2,331.13	306.09
Site Name	2019 Emissions					2020 Emissions				
	PM _{2.5} (tons/yr)	SO _x (tons/yr)	NO _x (tons/yr)	VOC (tons/yr)	NH ₃ (tons/yr)	PM _{2.5} (tons/yr)	SO _x (tons/yr)	NO _x (tons/yr)	VOC (tons/yr)	NH ₃ (tons/yr)
*ACH Foam Technologies										
ATK Launch Systems - Promontory	19.13	1.86	44.84	31.18	0.44	19.13	1.86	44.84	31.18	0.44
Big West Oil - Flying J Refinery	10.64	43.14	92.32	291.97	4.37	10.64	43.14	92.32	291.97	4.37
*Bimbo Bakeries USA Salt Lake City Plant										
*Brigham Young University- Main Campus										
Chevron Products Co - Salt Lake Refinery	33.99	23.62	260.87	304.98	8.90	33.99	23.62	260.87	304.98	8.90
Compass Minerals Ogden Inc. - Production Plant	80.50	9.81	137.90	82.29	3.61	80.50	9.81	137.90	82.29	3.61
*Geneva Nitrogen Inc. - Geneva Nitrogen Plant										
Hexcel Corporation- Salt Lake Operations	77.09	50.15	188.81	171.86	92.65	78.15	50.31	186.51	174.97	93.82
Hill Air Force Base - Main Base	26.10	34.14	283.95	306.86	1.45	26.10	34.14	283.95	306.86	1.45
Holly Corp- HRMC and HEP Woods Cross Operations	13.27	109.96	181.71	157.86	17.82	13.27	109.96	181.71	157.86	17.82
Kemecott Utah Copper LLC- Mine & Copperton Concentrator	411.25	6.60	6,178.81	316.45	2.65	411.25	6.60	6,178.81	316.45	2.65
Kemecott Utah Copper LLC- Power Plant Lab Tailings Impoundment	165.61	1,344.13	1,039.39	33.80	1.56	165.61	1,344.13	1,039.39	33.80	1.56
Kemecott Utah Copper LLC- Smelter & Refinery	443.16	863.74	208.34	12.49	9.75	443.16	863.74	208.34	12.49	9.75
Lhoist North America - Grantsville Plant	0.25	0.02	0.21	0.14	0.00	0.25	0.02	0.21	0.14	0.00
McWane Ductile - Utah	13.34	3.90	38.60	29.55	0.50	13.34	3.90	38.60	29.55	0.50
Nucor Steel- Nucor Steel	33.87	93.59	214.04	39.50	2.32	33.87	93.59	214.04	39.50	2.32
PacificCorp Energy- Gadsby Power Plant	16.86	1.52	117.39	9.57	13.15	16.86	1.52	117.39	9.57	13.15
PacificCorp Energy- Lake Side Power Plant	58.39	10.58	246.67	38.59	152.04	58.39	10.58	246.67	38.59	152.04
Procter and Gamble-Paper Manufacturing Plant	150.15	1.45	124.86	162.37	0.17	150.15	1.45	124.86	162.37	0.17
*Snowbird Development Corporation										
Tesoro Refining & Marketing Company LLC	91.38	91.20	275.00	268.63	3.77	91.38	91.20	275.00	268.63	3.77
University of Utah- University of Utah facilities	15.64	0.87	60.36	10.92	3.45	17.46	0.89	61.66	11.15	3.52
Utah Municipal Power Agency - West Valley Power Plant	3.94	0.36	8.55	1.25	0.00	3.94	0.36	8.55	1.25	0.00
Vulcraft - Division of Nucor Corporation- Steel Products Manufacturing	13.94	0.77	10.56	69.86	0.07	13.94	0.77	10.56	69.86	0.07
*Wasatch Integrated Waste Mgt District- County Landfill & Energy Recovery Facility (DCERF)										
Total =	1,678.50	2,691.42	9,713.18	2,340.11	318.66	1,681.37	2,691.60	9,712.18	2,343.45	319.90

Table 4.2 Emissions from Point Sources

Chapter 5 – PROVISIONS TO ENSURE BEST AVAILABLE CONTROL MEASURES

5.1 Introduction

This chapter summarizes the requirement for a Serious Area plan revision to ensure the implementation of best available control measures (BACM) no later than four years after reclassification. Additional detail concerning the assessment of specific emission control measures is contained in the Technical Support Document.

BACM is defined as any technologically and economically feasible control measure that can be implemented in whole or in part within 4 years after the date of reclassification (to Serious) and that generally can achieve greater permanent and enforceable emissions reductions ... than can be achieved through the implementation of reasonable available control measures (RACM) on the same sources. BACM includes best available control technology (BACT).

The requirement to ensure BACM/BACT sits in addition to the requirements from the Moderate Area SIP, which included RACM/RACT. Utah addressed this requirement in its Moderate Area SIP⁵ (submitted December 22, 2014).

Unlike the RACM required as part of the Moderate Area SIP, BACM/BACT is regarded by EPA as “generally independent” of attainment. This interpretation maintains the policy expressed in the Addendum ~~[to the implementation rule]~~ for PM₁₀ that BACM/BACT is to be determined without regard to the specific attainment demonstration for the area. Essentially, this means that if a control measure is determined to meet the definition of best available control measure or technology, it may not be disregarded simply because the demonstration of attainment might conclude that such measure would not be necessary to meet the NAAQS as expeditiously as practicable.

The BACM/BACT requirement for Serious PM_{2.5} nonattainment areas also applies to PM_{2.5} precursors, unless the state has submitted, and EPA has approved, a precursor analysis demonstrating that emissions from a particular precursor do not contribute significantly to PM_{2.5} levels that exceed the standard in the area. Utah has not included any such precursor demonstration with the Serious Area SIP for the Salt Lake City, UT nonattainment area. The list of PM_{2.5} precursors includes SO₂, NO_x, VOC and ammonia.

5.2 BACM Process

The Process for determining BACM/BACT for Serious PM_{2.5} Areas is articulated in 40 CFR 51.1010, and elaborated upon in the preamble to the rule. Essentially, this is a five step process where:

Step one is the development of a comprehensive inventory for the area, which aids in identifying the various source categories that contribute emissions to the airshed.

⁵ See SIP Section IX.A.21, Chapter 6 for a discussion of RACM/RACT in the Salt Lake City, UT PM_{2.5} nonattainment area.

1 Step two is to identify potential control measures. The list of these potential measures
2 should include options not previously considered as RACM/RACT for the area during the
3 development of the Moderate Area SIP.

4 In Step three, a determination is made for each of the potential control measures to see
5 whether or not it would be technologically feasible to implement.

6 Step four is a determination of economic feasibility applied to each of the potential
7 control measures that was determined to be technologically feasible. EPA did not
8 establish a specific fixed \$/ton cost threshold for economic feasibility determinations, but
9 indicated that states would need to consider emission reduction measures with higher
10 costs per ton when assessing the economic feasibility of BACM/BACT controls as
11 compared to the criteria applied in the RACM/RACT analysis for the same nonattainment
12 area.

13 Step five is to determine the earliest date by which an economically feasible control
14 measure can be implemented, in whole or in part.

15 5.3 Existing Control Measures

16 Ultimately, all control measures and technologies will have an effect on emission rates,
17 and it is important to reflect these emission rates in the attainment demonstration.

18 Some of these control measures will be new and will have resulted from the exercise of
19 ensuring that BACM/BACT will be implemented following reclassification of the area to
20 Serious, but other control measures will already exist. Since about 1970 there have been
21 regulations at both state and federal levels to mitigate air contaminants.

22 Utah's permitting rules require a review of new and modified major stationary sources in
23 nonattainment areas, as is required by Section 173 of the Clean Air Act. Beyond that
24 however, even minor sources and minor modifications to major sources planning to
25 locate anywhere in the state are required to undergo a new source review analysis and
26 receive an approval order to construct. Part of this review is an analysis to ensure the
27 ongoing application of Best Available Control Technology (BACT).

28 Along the central Wasatch Front, major and minor⁶ stationary sources have been required
29 to reduce emissions at several junctures to address nonattainment issues with SO₂, ozone,
30 PM₁₀ and PM_{2.5}.

31 In reviewing the existing control measures to see if they meet BACM/BACT, states may
32 not simply rely on prior BACT, LAER, and BART analyses for the purposes of showing
33 that a source has also met BACT for the PM_{2.5} NAAQS. Rather, EPA expects that in step
34 two of the determination process, the state would identify such measures as "existing
35 measures" that should be further evaluated as potential BACM or BACT.

36 Existing controls also affect the emission rates from non-stationary source categories.

37 The federal motor vehicle control program has been one of the most significant control
38 strategies affecting emissions that lead to PM_{2.5}. Tier 1 and 2 standards were
39 implemented by 1997 and 2008 respectively. Similarly, the Heavy-Duty Engine and
40 Vehicle Standards took effect in 2007 and were fully phased in by 2010. Air Quality
41 benefits -- particularly those stemming from the Tier 2 and heavy-duty vehicle standards

⁶ Within the context of this SIP, minor stationary sources are treated as "area sources". Such sources are typically regulated through promulgation of area source rules affecting various source categories.

-- continue to be realized as older higher polluting vehicles are replaced by newer cleaner vehicles. This trend may be seen in the inventory projections for on-road mobile sources despite the growth in vehicles and vehicle miles traveled that are factored into the same projections. Tier 3 standards will continue the progress made since the late-1960s. Tier 3 became effective in 2017 and will be fully phased in by 2025 and will reduce emissions from a typical passenger vehicle by 70 to 80 percent.

To supplement the federal motor vehicle control program, Inspection / Maintenance (I/M) Programs were implemented in Salt Lake, Davis, and Weber Counties. These programs have been effective in identifying vehicles that no longer meet the emission specifications for their respective makes and models, and in ensuring that those vehicles are repaired in a timely manner.

Emissions from non-road mobile emission sources also benefit from several significant regulatory programs enacted at the federal level. This category of emitters includes airplanes, locomotives, hand-held engines, and larger portable engines such as generators and construction equipment. The effectiveness of these controls has been incorporated into the "NONROAD" model UDAQ uses to compile the inventory information for this source category. These measures affect not only the levels of current emissions, but some continue to affect emissions trends as well.

5.4 SIP Controls

Beyond the benefits attributable to the controls already in place, there are new controls identified by this SIP that provide additional benefit toward reaching attainment. A summary of the BACM/BACT review is presented here for each of the emission source sectors.

Stationary Point sources:

Best Available Control Technology – EPA has long interpreted BACM to include BACT, and in the same way that RACT is generally applied to stationary sources BACT is also regarded as a part of BACM that is typically applied to the review of stationary sources. This is not to say that BACT does not consider control measures other than technologies. The requirement for BACT at existing sources in the context of PM_{2.5} NAAQS implementation is separate and distinct from the BACT requirement for permitting new and modified sources under the Prevention of Significant Deterioration (PSD) program. However, BACT determinations for PM_{2.5} SIP purposes are to follow the same process and criteria that stem from the PSD program.

This SIP used the definition of "major stationary source" to compile a list of sources that would receive a source-specific BACT review. For a serious PM_{2.5} nonattainment area, this means any source that emits, or has the potential to emit, 70 ton per year or more of direct PM_{2.5} or any PM_{2.5} precursor. The 2014 tri-annual emissions inventory was used to assess the actual emissions. The rest of the stationary (point) sources were assumed to represent a portion of the overall "area source" inventory.

Sources meeting the criteria described above were individually evaluated to determine whether their operations would be consistent with BACT.

In conducting the analysis, UDAQ found that, as a whole, the large stationary sources were already operating with a high degree of emission control. It follows that the percentage of SIP related emissions reductions is not large relative to the overall quantity

1 of emissions. As stated before, many of these sources were recently reviewed to ensure
2 RACT as part of the Moderate Area SIP. Routine permitting in the Salt Lake City
3 nonattainment area already includes BACT as an ongoing standard of review, and when
4 developing the Moderate Area SIP, UDAQ generally identified a level of emission
5 control that would be more consistent with best available controls than the reasonably
6 available controls that were required.

7 For the Salt Lake City, UT nonattainment area, there are 26 stationary point sources that
8 met or meet the threshold of 70 tons or more per year for PM_{2.5} or any precursor. The
9 emissions from these sources that were modeled for 2016, 2017, 2019, and 2020 are
10 shown below in Table 4.2. Note that these emissions also include any growth projections
11 that were applied.

12 The BACT analysis for each of the listed sources may be found in the Technical Support
13 Document.

14 The actual emission limits and operating procedures that reflect the implementation of
15 BACM/BACT are listed in SIP Subsection IX. Part H. 11. & 12, which is made
16 enforceable via incorporation into the Utah Air Quality Rules at R307-110-17.

17 *New Source Review / Banked Emission Reduction Credits* – Under Utah’s new source
18 review rules in R307-403-8, banking of emission reduction credits (ERCs) is permitted to
19 the fullest extent allowed by applicable Federal Law as identified in 40 CFR 51,
20 Appendix S, among other documents. Under Appendix S, Section IV.C.5, a permitting
21 authority may allow banked ERCs to be used under the preconstruction review program
22 (R307-403) as long as the banked ERCs are identified and accounted for in the SIP
23 control strategy. For the Moderate Area PM_{2.5} SIP, however, it was not possible to
24 include banked ERCs in the attainment demonstration. The PM_{2.5} SIP adopted by the Air
25 Quality Board on December 4, 2013 did not include banked PM_{2.5} or PM_{2.5} precursor
26 ERCs in the attainment demonstration and therefore under R307-403-8 any ERCs that
27 were banked prior to December 4, 2013 could no longer be used as emission offsets for
28 PM_{2.5} nonattainment areas. The use of these existing banked ERCs to meet the
29 requirements of existing SIPs for PM₁₀, SO₂ and ozone are not affected by the PM_{2.5} SIP
30 and would be evaluated according to the provisions of those SIPs. In this Serious Area
31 SIP, the handful of ERCs generated after December 4, 2013 for PM_{2.5} or PM_{2.5} precursors
32 has been accounted for in the modeled attainment demonstration and are eligible to be
33 used as emission offsets for PM_{2.5} or PM_{2.5} precursors. A listing of these ERCs has been
34 included in the Technical Support Documentation.

35
36 Area sources:

37 Smaller stationary sources are too numerous to warrant individual attention, but they
38 must also implement BACM/BACT.

39 The area source BACM analysis consisted of a thorough review of the entire seasonally
40 adjusted area source inventory for anthropocentrically derived direct PM_{2.5} and precursor
41 constituents.

42 The analysis centered on whether best control measures are available for a given source
43 category. A search through the literature identified EPA guidance documents and
44 regulations including: Control Techniques Guidelines (CTG), Alternative Control
45 Techniques (ACT), and New Source Performance Standards (NSPS). Other sources of
46 information included the Ozone Transport Commission’s (OTC) model rules as well as
47 rules from other serious nonattainment air districts addressing ozone and/or PM_{2.5}.

For the BACM review, each of UDAQ's existing area source rules⁷ was re-evaluated with respect to these examples to ensure that all appropriate source categories have been addressed in rulemaking, and that the level of control required is consistent with BACM. For newly identified controls or enhancement of existing controls, an evaluation was made to determine technological and economic feasibility.

The BACM review resulted in revisions to 13 different rules which affect surface coating (for a variety of different surfaces), graphic arts, and Aerospace Manufacture & Rework Facilities. At the same time however, a cleaning solvent VOC limit of 0.21 lb/gal found in some of these rules was found to be overly aggressive and had to be relaxed.

The overall BACT analysis for the area source rules may be found in the Technical Support Document.

The area source rules have been incorporated into the Utah Air Quality Rules at R307.

Table 5.1 shows the effectiveness of the area source rules within the Salt Lake City, UT nonattainment area by indicating the quantities of emissions eliminated from the inventory for each of the relevant years. Emission units are in lb/day.

SLC, UT PM2.5 Nonattainment Area		Emissions Reduced in Pounds Per Day (lb/day)								
Area Source Rule Name	2016 Base Year					2017 Milestone Year				
	NOx	VOC	NH3	SO2	PM2.5	NOx	VOC	NH3	SO2	PM2.5
adhesive/sealants	0.00	869.91	0.00	0.00	0.00	0.00	1,176.59	0.00	0.00	0.00
aerospace										
aggregate operations	0.00	0.00	0.00	0.00	5.59	0.00	0.00	0.00	0.00	5.59
appliance										
autobody	0.00	344.17	0.00	0.00	0.00	0.00	698.06	0.00	0.00	0.00
coil/containers										
commercial cooking	0.00	51.31	0.00	0.00	0.00	0.00	52.01	0.00	0.00	0.00
consumer products	0.00	4,372.48	0.00	0.00	0.00	0.00	4,435.39	0.00	0.00	0.00
degreasing										
fabric/vinyl										
flat wood										
fugitive dust	0.00	0.00	0.00	0.00	1,442.43	0.00	0.00	0.00	0.00	1,455.69
graphic art										
Hydronic heater ban	5.80	188.20	4.80	5.80	178.60	5.60	187.40	4.60	5.60	178.40
Landfill	0.00	276.51	0.00	0.00	0.00	0.00	281.87	0.00	0.00	0.00
magnet wire										
metal furniture										
misc metal										
paint	0.00	6,089.71	0.00	0.00	0.00	0.00	6,177.26	0.00	0.00	0.00
paper/film/foil										
pilot light	3,383.76	197.98	0.00	21.60	15.48	4,511.65	263.95	0.00	28.79	20.62
plastic										
Residential wood burning ban	1,344.82	10,436.32	389.15	133.89	9,046.46	1,339.19	10,405.97	386.33	133.26	9,019.87
water heaters										
wood furniture manuf										
Total Area Source Emissions Reduced	4,734.4	22,826.6	393.9	161.3	10,688.6	5,856.4	23,678.5	390.9	167.7	10,680.2

⁷ As part of the Moderate Area PM_{2.5} SIP, UDAQ introduced or augmented 25 area source rules to control emissions of PM_{2.5} or PM_{2.5} precursors.

SLC, UT PM2.5 Nonattainment Area		Emissions Reduced in Pounds Per Day (lb/day)								
Area Source Rule Name	2019 Attainment Year					2020 Milestone Year				
	NOx	VOC	NH3	SO2	PM2.5	NOx	VOC	NH3	SO2	PM2.5
adhesive/sealants	0.00	1,513.14	0.00	0.00	0.00	0.00	1,533.71	0.00	0.00	0.00
aerospace	0.00	28.73	0.00	0.00	0.00	0.00	43.13	0.00	0.00	0.00
aggregate operations	0.00	0.00	0.00	0.00	5.57	0.00	0.00	0.00	0.00	5.56
appliance	0.00	0.46	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00
autobody	0.00	1,435.97	0.00	0.00	0.00	0.00	1,817.76	0.00	0.00	0.00
coil/containers	0.00	83.64	0.00	0.00	0.00	0.00	125.00	0.00	0.00	0.00
commercial cooking	0.00	53.57	0.00	0.00	0.00	0.00	54.29	0.00	0.00	0.00
consumer products	0.00	4,559.88	0.00	0.00	0.00	0.00	4,625.34	0.00	0.00	0.00
degreasing	0.00	1,014.89	0.00	0.00	0.00	0.00	1,527.89	0.00	0.00	0.00
fabric/vinyl	0.00	362.02	0.00	0.00	0.00	0.00	442.96	0.00	0.00	0.00
flat wood	0.00	11.37	0.00	0.00	0.00	0.00	17.15	0.00	0.00	0.00
fugitive dust	0.00	0.00	0.00	0.00	1,483.96	0.00	0.00	0.00	0.00	1,497.15
graphic art	0.00	995.47	0.00	0.00	0.00	0.00	1,062.39	0.00	0.00	0.00
Hydronic heater ban	5.80	186.60	4.80	5.80	177.00	5.80	186.00	4.80	5.80	176.60
Landfill	0.00	293.81	0.00	0.00	0.00	0.00	299.37	0.00	0.00	0.00
magnet wire	0.00	22.03	0.00	0.00	0.00	0.00	22.18	0.00	0.00	0.00
metal furniture	0.00	167.13	0.00	0.00	0.00	0.00	249.51	0.00	0.00	0.00
misc metal	0.00	273.76	0.00	0.00	0.00	0.00	411.43	0.00	0.00	0.00
paint	0.00	6,344.07	0.00	0.00	0.00	0.00	6,441.84	0.00	0.00	0.00
paper/film/foil	0.00	97.89	0.00	0.00	0.00	0.00	147.62	0.00	0.00	0.00
pilot light	5,834.66	396.40	0.00	43.19	31.00	4,926.20	361.78	0.00	39.47	28.29
plastic	0.00	189.32	0.00	0.00	0.00	0.00	222.41	0.00	0.00	0.00
Residential wood burning ban	1,332.30	10,343.10	385.71	132.01	8,964.81	1,327.61	10,311.50	384.46	131.70	8,939.47
water heaters	1,396.75	0.00	0.00	0.00	0.00	1,632.52	0.00	0.00	0.00	0.00
wood furniture manuf	0.00	604.15	0.00	0.00	0.00	0.00	910.88	0.00	0.00	0.00
Total Emissions Reduced: (lb/day)	8,569.5	28,977.4	390.5	181.0	10,662.3	7,892.1	30,814.8	389.3	177.0	10,647.1

Table 5.1, Emissions Reductions from Area Source SIP Controls

On-road mobile sources:

Federal Regulations

Section 209(a) of the Clean Air Act (CAA) preempts states other than California from adopting or enforcing standards for on-highway vehicles. Nevertheless, emissions reduction credit for federal on-highway vehicle controls was accounted for because federal control effectiveness has been incorporated into the MOVES model which the Utah Division of Air Quality (UDAQ) uses to calculate on-road emissions. Additional information is provided in the Technical Support Document.

State Regulations

Inspection/Maintenance (I/M) programs are already in place for Salt Lake, Davis and Weber Counties. Utah Code Annotated 41-6a-1642 gives authority to each county to implement and manage an I/M program to attain and maintain any National Ambient Air Quality Standard (NAAQS). I/M programs were implemented in Salt Lake and Davis counties in 1984, and a program for Weber County was added in 1990. These programs have been effective in both identifying vehicles that no longer meet the emission specifications for their respective makes and models and ensuring that those vehicles are repaired in a timely manner.

Davis, Salt Lake and Weber Counties current I/M programs consist of decentralized, test-and-repair network for the testing of all model year 1968 and newer vehicles except for exempt vehicles registered in the applicable county. Vehicles less than two years old as of January 1 on any given year are exempt from an emissions inspection. Vehicles from two to five years old as of January 1 on any given year are inspected biennially. Vehicles six years old and older as of January 1 on any given year are inspected annually. Vehicles

1 1996 and newer are subject to an OBD II inspection. Vehicles 1995 and older are subject
2 to a two-speed idle test. To ensure that analyzers are the highest quality and to take
3 advantage of improved technology, Davis, Salt Lake and Weber Counties recently
4 updated the test analyzers used in their respective I/M programs.

5 Off-road mobile sources:

6 Section 209(e) of the Clean Air Act (CAA) preempts states other than California from
7 adopting or enforcing emissions standards for terrestrial and marine non-road engines or
8 vehicles. Similarly, CAA section 233 preempts states from adopting or enforcing
9 emissions standards from aircraft or aircraft engines. For this reason, the Utah Division
10 of Air Quality (UDAQ) did not consider any SIP controls for non-road mobile sources
11 beyond those already promulgated at the federal level. Nevertheless, emissions reduction
12 credit for these federal controls was accounted for because their effectiveness has been
13 incorporated into the NONROAD model which UDAQ uses to calculate non-road
14 emissions. Additional information is provided in the Technical Support Document.

15
16

Chapter 6 – ATTAINMENT DEMONSTRATION

6.1 Air Quality Modeling

UDAQ used the Comprehensive Air Quality Model with Extensions (CAMx) version 6.30 for air quality modeling. CAMx v6.30 is a state-of-the-art air quality model that includes State of Utah funded enhancements for wintertime modeling. These enhancements include snow chemistry, topographical and surface albedo refinements. CAMx is an EPA approved model for use in SIP modeling. Its configuration for use in this SIP, with respect to model options and model adjustments, is discussed in the Technical Support Document.

Emissions Preparation

The emissions processing model used in conjunction with CAMx is the Sparse Matrix Operator Kernel Emissions Modeling System (SMOKE) version 3.6.5⁸. SMOKE prepares the annual emissions inventory for use in the air quality model. There are three aspects to the preparation of an annual emissions inventory for air quality modeling:

- Temporal: Convert emissions from annual to daily, weekly and hourly values.
- Spatial: Convert emissions from a county-wide average to gridded emissions.
- Speciation: Decompose PM_{2.5} and VOC emissions estimates into individual subspecies using the latest Carbon Bond 6 speciation profiles.

The process of breaking down emissions for the air quality model was done with sets of activity profiles and associated cross reference files. These are created for point or large industrial source emissions, smaller area sources, and mobile sources. Direct PM_{2.5} and PM_{2.5} precursor estimates were modified via temporal profiles to reflect wintertime conditions.

Activity profiles and their associated cross reference files from the EPA's 2011v6⁹ modeling platform were used. For stationary non-point and mobile sources, spatial surrogates from the EPA Clearinghouse for Inventories and Emissions Factors (CHIEF¹⁰) were used to distribute emissions in space across the modeling domain. Emissions from large industrial sources (i.e., point) were placed at the location of the source itself. Where reliable local information was available (e.g., population density, traffic demand modeling, residential heating), profiles and surrogates were modified or developed to reflect that information.

Photochemical Modeling Domains and Grid Resolution

The UDAQ CAMx 6.30 modeling framework consists of two spatial domains: a high-resolution 1.33 km domain nested inside of a coarser 4 km domain (see Figure 6.1,

⁸ <https://www.emascenter.org/smoke/>

⁹ <https://www.epa.gov/air-emissions-modeling/2011-version-6-air-emissions-modeling-platforms>

¹⁰ <https://www.epa.gov/chief>

below). This configuration allows one to efficiently integrate regional effects with local impacts within the Salt Lake City nonattainment area. Vertical resolution in the model consists of 41 layers extending to the top of the atmosphere.

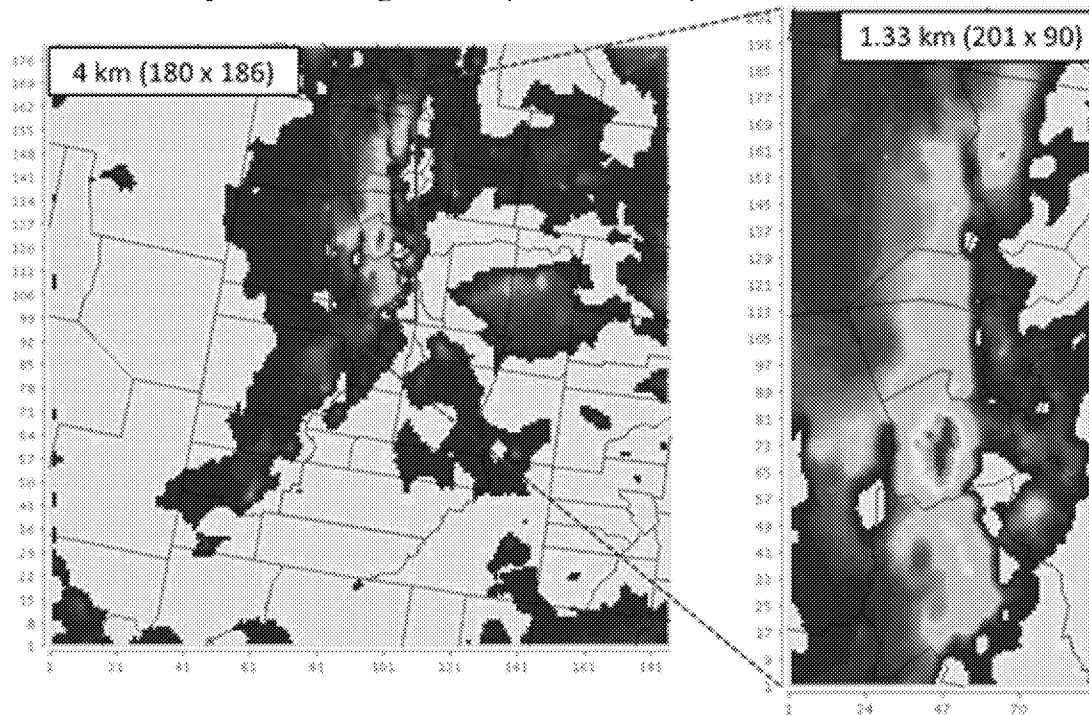


Figure 6.1: Two CAMx modeling domains in two-way nesting configuration.

The UDAQ 4 km coarse domain covers the entire state of Utah, a significant portion of Eastern Nevada (including Las Vegas), as well as smaller portions of Idaho, Wyoming, Colorado, and Arizona. The fine 1.33 km domain covers all of Utah's three PM_{2.5} nonattainment areas, including the Salt Lake City nonattainment area. Throughout this document, we will refer to the fine 1.33 km domain as the "modeling domain" when the coarse domain is not specified.

Meteorological Data

Meteorological modeling was carried out by the University of Utah with financial support from UDAQ.

Meteorological inputs were derived using the Weather Research and Forecasting¹¹ (WRF) Advanced Research WRF (WRF-ARW) Model to prepare meteorological datasets for our use with the photochemical model. WRF contains separate modules to compute different physical processes such as surface energy budgets and soil interactions, turbulence, cloud microphysics, and atmospheric radiation. Within WRF, the user has many options for selecting the different schemes for each type of physical process. There is also a WRF Preprocessing System (WPS) that generates the initial and boundary conditions used by WRF, based on topographic datasets, land use information, and larger-scale atmospheric and oceanic models.

¹¹ <https://www.mmm.ucar.edu/weather-research-and-forecasting-model>

Model performance of WRF was assessed against observations at sites maintained by the University. A summary of the performance evaluation results for WRF is included in the Technical Support Document: WRF has reasonable ability to replicate the vertical temperature structure of the boundary layer (i.e., the temperature inversion), although it is difficult for WRF to reproduce the inversion when the inversion is shallow and strong (i.e., an 8 degree temperature increase over 100 vertical meters).

Episode Selection

Part of the modeling exercise involves a test to see whether the model can successfully replicate the PM_{2.5} mass and composition that was observed during some prior episode(s) of elevated PM_{2.5} concentration.

The selection of an appropriate episode, or episodes, for use in this exercise requires some forethought and should determine the meteorological episode that helps produce the best air quality modeling performance.

EPA's April 2007 "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze" identifies some selection criteria that should be considered for SIP modeling, including:

- Select episodes that represent a variety of meteorological conditions that lead to elevated PM_{2.5}.
- Select episodes during which observed concentrations are close to the baseline design value.
- Select episodes that have extensive air quality data bases.
- Select enough episodes such that the model attainment test is based on multiple days at each monitor violating NAAQS.

After careful consideration, the following meteorological episodes were selected as candidates for Utah's SIP modeling:

- January 1-10, 2011
- December 7-19, 2013
- February 1-16, 2016

In addition to the criteria identified in the modeling guidance, each of these candidate episodes may be characterized as having the following atmospheric conditions:

- Nearly non-existent surface winds
- Light to moderate winds aloft (wind speeds at mountaintop < 10-15 m/s)
- Simple cloud structure in the lower troposphere (e.g., consisting of only one or no cloud layer)

- Singular 24-hour PM_{2.5} peaks suggesting the absence of weak intermittent storms during the episode

Previous work conducted by the University of Utah and Utah Division of Air Quality (DAQ) showed the four conditions listed above improve the likelihood for successfully simulating wintertime persistent cold air pools in the Weather Research and Forecasting (WRF) model¹².

A comprehensive discussion of the meteorology model performance for all three episodes may be found in the Technical Support Document, as well as at the link below.

<https://documents.deq.utah.gov/air-quality/planning/technical-analysis/research/model-improvements/3-wintertime-episodes/DAQ-2017-014342.pdf>

Model adjustments

In order to better simulate Utah's winter-time inversion episodes six different adjustments were made to CAMx input data:

1. Increased vertical diffusion rates (Kvpatch)
2. Lowered residential wood smoke emissions to reflect burn ban compliance during forecasted high PM_{2.5} days (burn ban)
3. Ozone deposition velocity set to zero and increased urban area surface albedo (snow chemistry)
4. Cloud water content reduced during certain days (cloud adjustment)
5. Ammonia injection to account for missing ammonia sources in UDAQ's inventory. This is defined as artificially adding non-inventoried ammonia emissions to the inventoried emissions that are input into CAMx.
6. Reduced the dry deposition rate of ammonia by setting ammonia Rscale to 1. Rscale is a parameter in CAMx that reflects surface resistance.

Depending on the episode, different adjustments were applied. All adjustments were applied to the January 2011 episode while select adjustments were applied to the other two episodes.

Kvpatch improved overall model performance by enhancing vertical mixing over urban areas. Snow chemistry modifications, which included reducing ozone deposition velocity and increasing surface albedo over urban areas, helped improve the model performance by better representing secondary ammonium nitrate formation during winter-time inversion episodes in Utah.

Ammonia injection values were based on measurements conducted during February 2016. These measurements were used to determine the ammonia injection values for the February 2016 episode. Similar injection values were then assumed for the January 2011 episode.

¹² <https://www.mmm.ucar.edu/weather-research-and-forecasting-model>

Cloud adjustments were only applied to the January 2011 episode, which was characterized by cloud cover on January 6-8 over the Salt Lake Valley. This cloud cover led to a high bias in sulfate due to the effect of ammonia on the gas-to-particle partitioning of sulfate in clouds. Application of the cloud adjustment scheme helped reduce this bias.

Rscale modification and burn ban adjustments were also only applied to the January 2011 episode. The burn ban adjustments reflect the compliance rate with the state's two-stage policy ban on wood-burning.

Episodic model performance

Shown below for each of three episodes are the CAMx performance results in total 24-hour PM_{2.5} concentrations.

January 1-10, 2011

For the January meteorological episode, CAMx performance in 24-hour PM_{2.5} is generally good at Hawthorne (Salt Lake County) (**Figure 6.2.1**). However, the earlier part of the modeled episode at Hawthorne is impacted by the absence of thin mid-level clouds that were present during January 3-5. The absence of clouds here had the effect of warming the surface and increasing the mixing height in the simulation. Kvpatch depth was lowered during this period to account for this, while keeping modeled primary aerosol concentrations reasonable.

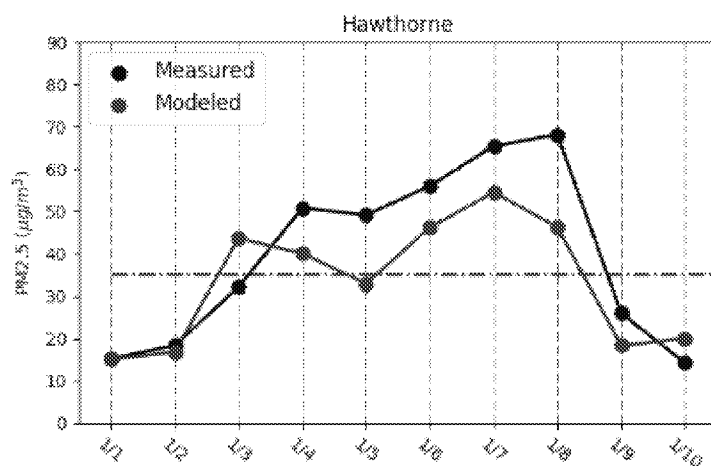


Figure 6.2.1: 24-hr PM_{2.5} concentrations during January, 2011 episode. Observed (black) vs. modeled (red) for Hawthorne, Salt Lake County

Looking at **Figure 6.2.2**, observed speciated PM_{2.5} mass from the Hawthorne Chemical Speciation Network (CSN) monitor (January 7), there is good agreement in nitrate (NO₃) and ammonium (NH₄) with the CAMx modeling results. The agreement between modeled and observed NO₃ is a benefit from the ammonia injection. Simulated fine crustal matter (CM) and elemental carbon (EC) concentrations were a bit higher than observed. The overestimation [in these two primary aerosols were the likely result of a high bias in MOVES 2014a (EC) and the re-suspended road dust calculation tool provided by the EPA (CM)] of CM was likely the result of a high bias in the re-suspended road dust calculation tool (AP-42).

Measured vs. Modeled

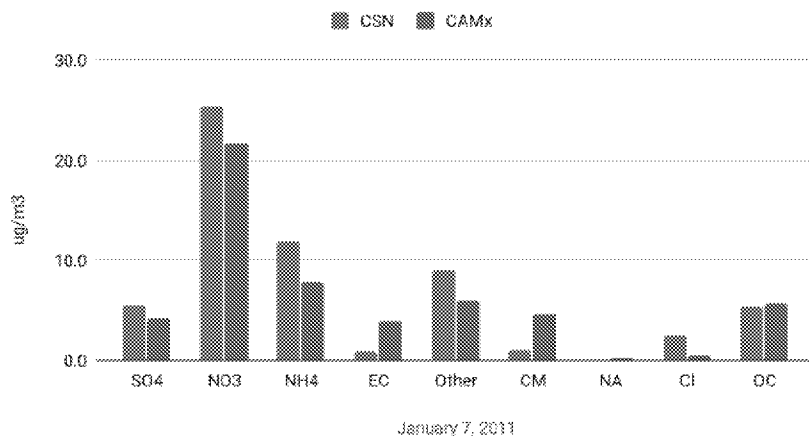


Figure 6.2.2: 24-hr speciated PM_{2.5} mass (µg/m³) for January 7, 2011. Blue (red) bars represent measured (modeled) mass for Hawthorne, Salt Lake County.

December 7-19, 2013

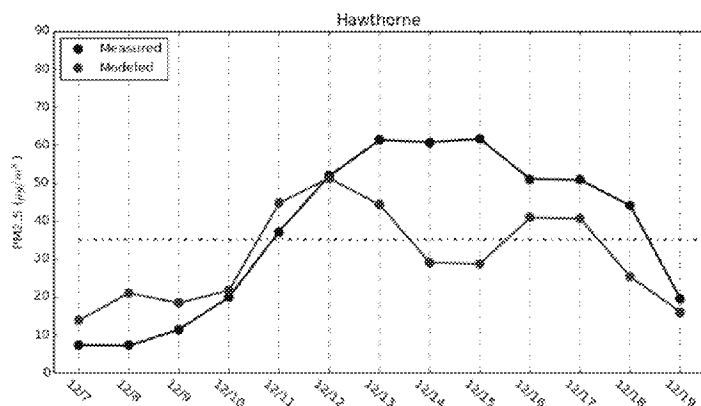


Figure 6.3.1: 24-hr PM_{2.5} concentrations during December, 2013 episode. Observed (black) vs. modeled (red) for Hawthorne, Salt Lake County.

Figure 6.3.1 indicates that, at Hawthorne, modeled PM_{2.5} was of a similar magnitude as observed. However, there was a bimodality in the modeled results not observed in measurements. While observations show peak PM_{2.5} concentrations during December 13-15, CAMx is producing a local minima.

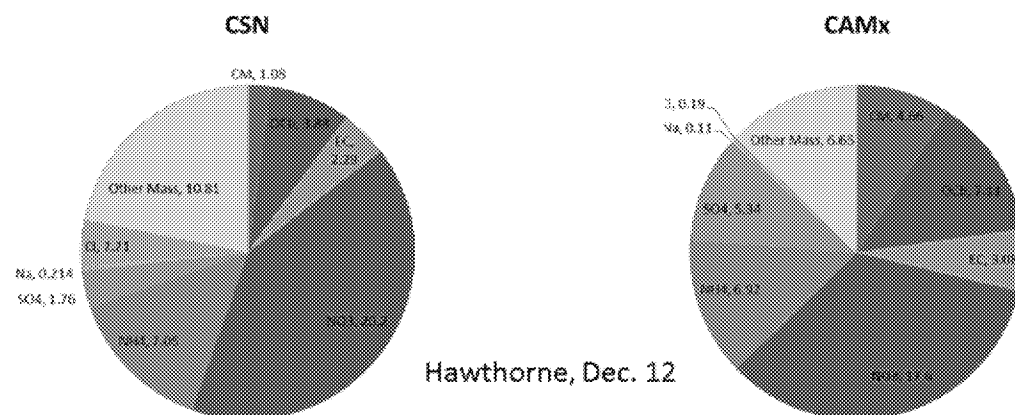


Figure 6.3.2: 24-hr speciated PM_{2.5} mass (ug/m³), December 12, 2013. Observed (left) vs. modeled (right). Hawthorne, Salt Lake County.

Speciated AQS data was available for only one day (December 12) at the onset of the multi-day peak PM_{2.5} period (December 12-16). NH₄ and NO₃ appear well simulated. As with the January, 2011 episode, the modeled crustal matter apportionment is much higher than the observed. Modeled SO₄ was roughly 3 times higher than observed (see **Figure 6.3.2**).

Overall, the speciation for December 12 appears reasonable, but the use of the December, 2013 episode data may not be a good choice for attainment demonstration modeling. The anti-correlation between modeled and observed results during the peak PM_{2.5} shows that the December, 2013 CAMx performance is undesirable for SIP development.

February 1-16, 2016

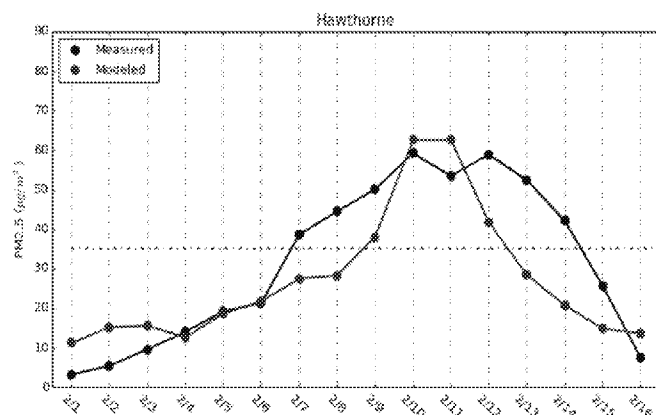


Figure 6.4.1: 24-hr PM_{2.5} concentrations during February, 2016 episode. Observed (black) vs. modeled (red) for Hawthorne, Salt Lake County.

Figure 6.4.1 shows that CAMx was able to simulate the peak PM_{2.5} concentration levels seen in monitored observations at Hawthorne for February, 2016. At Hawthorne, modeled PM_{2.5} tapered off rapidly during the latter part of the February episode (February 12-16).

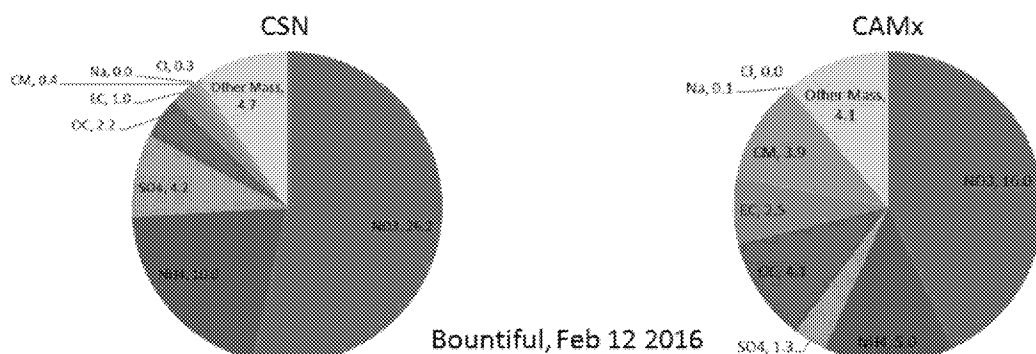


Figure 6.4.2: 24-hr speciated PM_{2.5} mass (ug/m³), February 12, 2016. Observed (top) vs. modeled (bottom). Bountiful, Davis County. Bountiful is used since Hawthorne measurements were unavailable.

It can be seen from **Figure 6.4.2** that the February 12, NO₃ and NH₄ simulations were relatively poor compared to the other two episodes considered. Modeled organic carbon (OC) was twice as high measured and SO₄ was under-represented. The CAMx results don't quite reflect the high wintertime PM_{2.5} composition one would expect during this period.

Conclusion

Examining the PM_{2.5} model performance for all three episodes, it's clear that CAMx performed best when using the January, 2011 WRF output. The WRF model was specifically calibrated to the meteorological conditions experienced during January, 2011; a period that coincided with the Persistent Cold Air Pool Study¹³ (PCAPS), an exhaustive field campaign focused exclusively on the Salt Lake Valley. The scatter plots below (**Figure 6.5**) show simulated PM_{2.5} (CAMx) against the PM_{2.5}, measured at Utah's Hawthorne federal reference method (FRM) monitor. Linear regression fits are also shown (dashed lines). The relatively tight dispersion in (FRM, CAMx) points along the diagonal black line (x=y) for January, 2011 implies that model bias is low and temporal correlation is high relative to when using WRF output for the other two episodes.

¹³ <http://www.pcaps.utah.edu/>

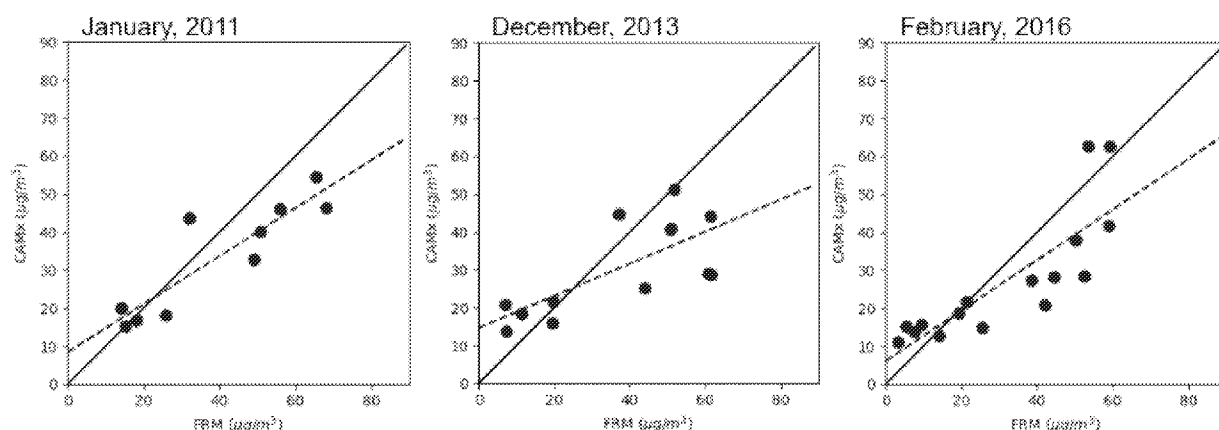


Figure 6.5: Modeled (vertical axis) versus measured (horizontal axis) 24-hour PM_{2.5} for three meteorological episodes. Dots represent each individual day of the modeling episode. Linear regression fits are shown for each episode (dashed line).

The January, 2011 WRF data produced superior performance for all important metrics when compared with the other two episodes. Therefore, UDAQ selected the January, 2011 episode to conduct its modeled attainment demonstration work. A more thorough discussion is provided in the Technical Support Document.

Photochemical Model Performance Evaluation

Introduction

To assess how accurately the photochemical model predicts observed concentrations and to demonstrate that the model can reliably predict the change in pollution levels in response to changes in emissions, a model performance evaluation was conducted. This model performance evaluation also provides support for the model modifications that were implemented (ammonia injection, albedo, snow cover, ozone deposition velocity, cloud-water content and vertical diffusion modifications) to more accurately reproduce winter-time inversion episodes. A detailed explanation of these model modifications as well as a more thorough examination of the model performance is provided in the Technical Support Document.

Available ambient monitoring data was used for this photochemical model performance evaluation. Data included 24-hr total PM_{2.5} and 24-hr chemically-speciated PM_{2.5} measurements collected at UDAQ's Hawthorne monitoring station in the Salt Lake City non-attainment area. Ammonia measurements collected during special field studies carried out in winters of 2016 were also used for this performance evaluation. These ammonia measurements were used since measurements of ammonia were not available during 2011. The evaluation was based on the December 31 – January 10, 2011 episode, which will be used for the modeled attainment test. The 2011 emissions inventory was considered for this purpose. The evaluation was also focused on days with PM_{2.5} concentration exceeding the 24-hr national ambient air quality standard ($> 35 \mu\text{g}/\text{m}^3$). December 31, which is a spin-up day, was excluded from this evaluation. A more detailed model performance evaluation that examines the model performance for ozone (O₃), nitrogen oxides (NO_x=NO+NO₂), carbon monoxide (CO) and volatile organic compounds (VOCs) is provided in the Technical Support Document. More details on the

model performance at various sites within the Salt Lake City non-attainment area are also included.

Daily PM_{2.5} Concentrations

Figure 6.6 shows 24-hr modeled and observed PM_{2.5} during January 1-10, 2011 at the Hawthorne monitoring station in the Salt Lake non-attainment area. Overall, the model accurately captures the temporal variation in PM_{2.5}. The gradual increase in PM_{2.5} concentration and its transition back to low levels are generally well reproduced by the model.

It is noteworthy that the overestimation in PM_{2.5} on January 3 at Hawthorne is related to the meteorological model performance on this day. While thin mid-level clouds were observed on January 3-4, these clouds were not simulated in the meteorological model, leading to an increasingly stable low-level boundary layer, particularly at night (details provided in Utah's meteorological model performance final report¹⁴). This limited the mixing of pollutants on January 3 in the model, resulting in an over-prediction in PM_{2.5} levels. The underestimation in PM_{2.5} on January 5, 2011 is also related to the meteorological model performance on this day, where the meteorological model overestimated the wind shear near the mixing height, leading to increased vertical instability in the simulated temperature structure and therefore lower modeled PM_{2.5} concentrations.

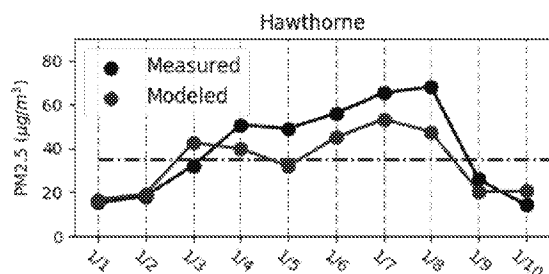


Figure 6.6: Ten-day time series of observed (black) and modeled (red) mean 24-hour PM_{2.5} concentrations (red) for January 1 - 10, 2011 (MDT) at Hawthorne, Salt Lake County. Dashed red line shows 24-hr PM_{2.5} NAAQS.

PM_{2.5} Chemical Speciation

To further investigate the model performance, UDAQ compared measured and modeled PM_{2.5} chemical species at the Hawthorne monitoring site, which is part of EPA's Chemical Speciation Network (CSN). **Figure 6.7** shows a comparison of the bulk chemical composition of measured and modeled PM_{2.5} at Hawthorne on January 7, 2011, which is the only PM_{2.5} exceedance day where measurement data is available. Chemical species, including nitrate (NO₃), sulfate (SO₄), ammonium (NH₄), organic carbon (OC), elemental carbon (EC), chloride (Cl), sodium (Na), crustal material (CM) and other species (other), were considered in this analysis.

The model performance for particulate nitrate (NO₃), which is the major PM_{2.5} component, was good, with both modeled and measured particulate nitrate accounting for

¹⁴<https://documents.deq.utah.gov/air-quality/planning/technical-analysis/research/model-improvements/3-wintertime-episodes/DAQ-2017-014342.pdf>

1 similar contributions to PM_{2.5} filter mass (40 and 41% respectively) (**panels b and d**).
2 Modeled and observed nitrate concentrations were also comparable, with modeled
3 concentration being biased low by about 15%. The model performance for particulate
4 sulfate was also reasonably good, with measured and modeled concentrations accounting
5 for 5.6 µg/m³ and 4.2 µg/m³ of total PM_{2.5} mass, respectively (**panels a and c**), resulting
6 in a low model bias of about 25%. Similarly to its performance for sulfate and nitrate, the
7 model was also biased low for ammonium by about 33.5%. This low model bias in
8 particulate ammonium can be attributed to the underestimation of ammonium chloride
9 (NH₄Cl) in the model.

10 Conversely, the model performance for organic carbon was quite good for January 7,
11 with modeled and observed concentrations being quite comparable. The model, on the
12 other hand, overestimated EC [~~which can be related to an overestimation of EC in Utah's~~
13 ~~mobile emissions modeling using MOVES 2014a.]and CM. Crustal material was~~
14 ~~[also]likely overestimated[, likely]~~ due to an overestimation of re-suspended road dust in
15 the emissions inventory.
16
17

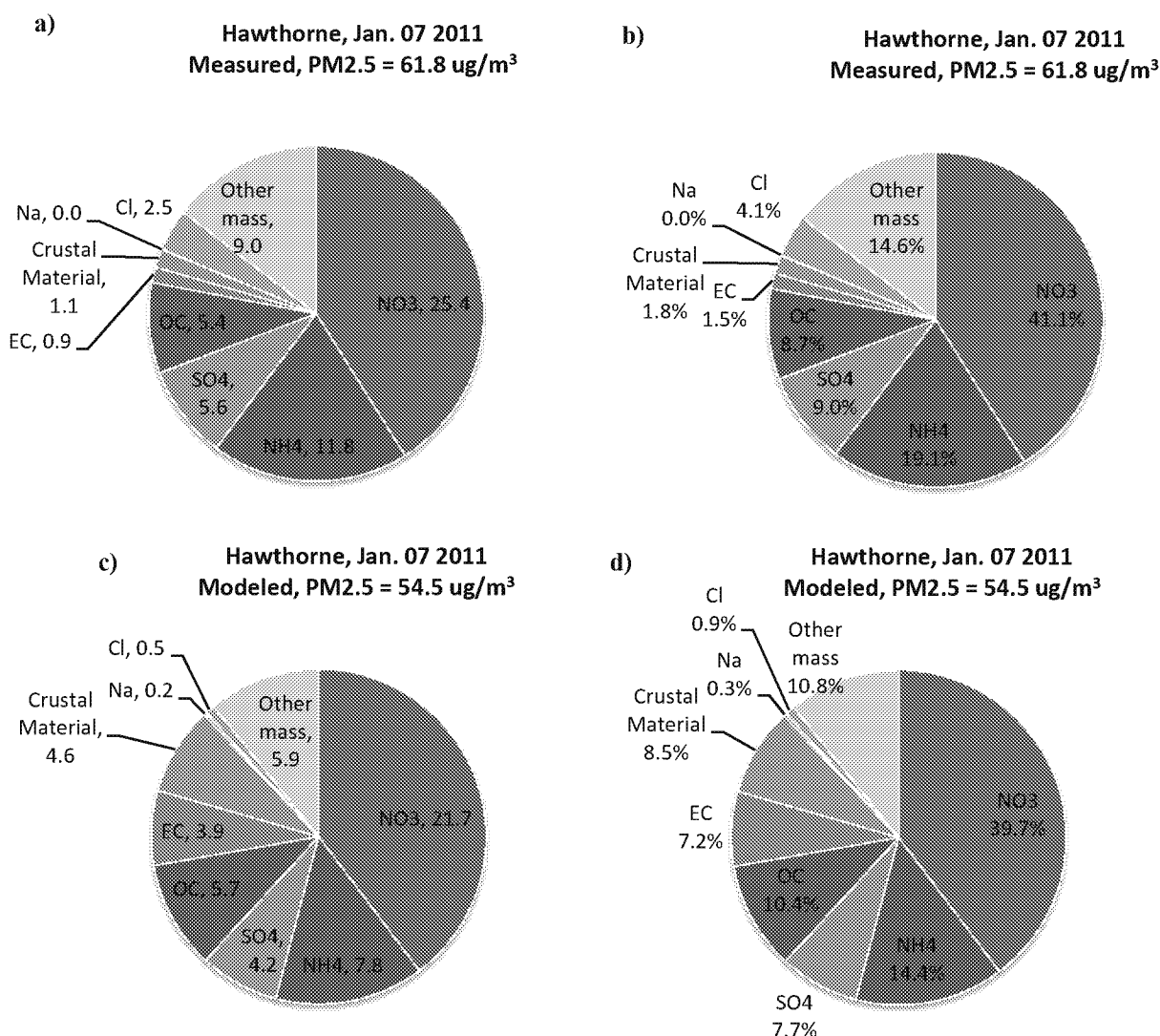


Figure 6.7, a-d: Measured (a,b) and modeled (c,d) mean 24-hour PM_{2.5} species for January 7, 2011 (MDT) at Hawthorne, Salt Lake County. Panels a and c show absolute concentrations (ug/m³) of PM_{2.5} chemical species while panels b and d display their percent contributions to total PM_{2.5}.

The model performance was also evaluated for ammonia (NH₃), which is an important precursor to the formation of ammonium nitrate, ammonium sulfate and ammonium chloride, all of which are important PM_{2.5} species accounting for over 50% of the PM_{2.5} mass during inversion events.

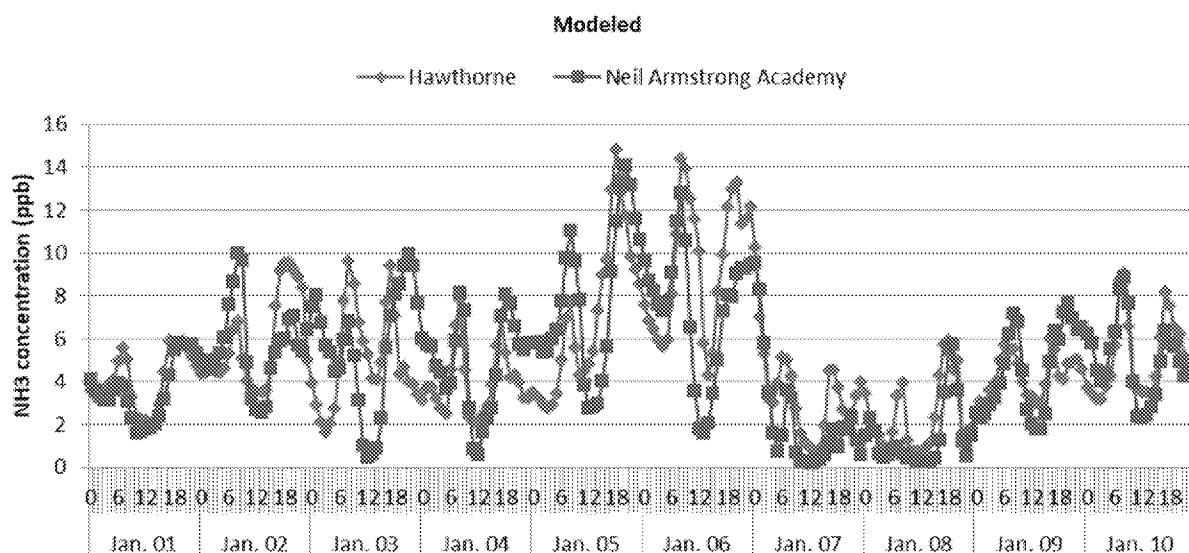


Figure 6.8: Hourly time series of modeled ammonia (ppm) for January 1 - 10, 2011 at Hawthorne, and Neil Armstrong Academy, Salt Lake County.

Modeled ammonia (**figure 6.8**) was compared to hourly ammonia measurements (**figure 6.9**) conducted at Neil Armstrong Academy during a special field study in winter 2016. Measurements from 2016 were considered since measurements of ammonia were not available during 2011. Hourly measurements were also only available at Neil Armstrong Academy, located in West Valley City in the Salt Lake non-attainment area. However, while these 2016 field study measurements cannot be directly compared to day-specific 2011 model simulations, the measurements are qualitatively useful to assess if the model predicts similar levels of ammonia during strong inversion conditions.

A comparison of measured and modeled ammonia shows that modeled ammonia at Hawthorne and Neil Armstrong Academy is well within the range observed in 2016. It also displays a similar behavior to measured NH_3 , with NH_3 concentration dropping during peak $\text{PM}_{2.5}$ events during which the airshed is saturated and virtually all near-surface ambient ammonia has yielded to particulate ammonium.

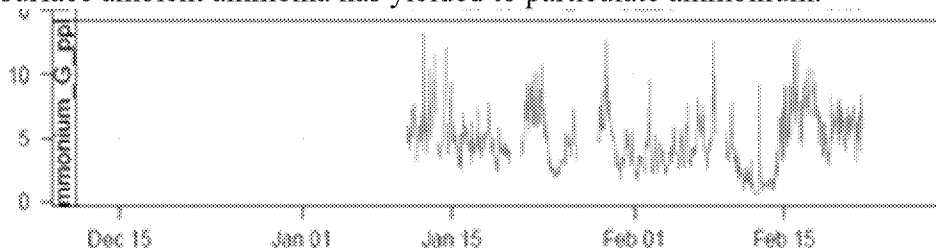


Figure 6.9: Hourly ammonia measurements from Neal Armstrong Academy (West Valley City, Salt Lake County). Note that ammonia drops during the persistent cold air pool period during Feb. 7 - 14, 2016.

Summary of Model Performance

The model performance replicating the buildup and clear out of $\text{PM}_{2.5}$ is good overall. The model captures well the temporal variation in $\text{PM}_{2.5}$. The gradual increase in $\text{PM}_{2.5}$

concentration and its transition back to low levels are generally well reproduced by the model. The model also predicts reasonably well PM_{2.5} concentration on peak days. It also overall replicates well the composition of PM_{2.5} on exceedance days, with good model performance for secondary nitrate and ammonium which account for over 50% of PM_{2.5} mass. Simulated ammonia concentrations are also within the range of those observed, further indicating that the model overall performs well. Several observations should be noted on the implications of these model performance findings on the attainment modeling presented in the following section. First, it has been demonstrated that model performance overall is good and, thus, the model can be used for air quality planning purposes. Second, consistent with EPA guidance, the model is used in a relative sense to project future year values. EPA suggests that this approach “should reduce some of the uncertainty attendant with using absolute model predictions alone.” Furthermore, the attainment modeling is supplemented by additional information to provide a weight of evidence determination.

Modeled Attainment Test

The UDAQ used the Software for Model Attainment Test - Community Edition (SMAT-CE) v. 1.01 utility from EPA¹⁵ to perform the modeled attainment test for daily PM_{2.5}. SMAT is designed to interpolate the species fractions of the PM mass from the Speciation Trends Network (STN) monitors to the FRM monitors. It also calculates the relative response factor (RRF) for grid cells near each monitor and uses these to calculate a future year design value for these grid cells. A grid of 3-by-3 (9) cells surrounding the monitors was used as the boundary for relative response factor (RRF) calculations.

The State of Utah operates three Chemical Speciation Network (CSN) monitors: Hawthorne, Bountiful, Lindon. Hawthorne is located in Salt Lake County, while Bountiful is in Davis to the North, and Lindon is located in Utah County to the South. Of the three, Hawthorne samples one out of three days, while the other two sample only one in six days.

This mismatch in sampling frequency lead, initially, to interpolated speciation profiles that were unexpectedly non-uniform across the Salt Lake Valley. To create more realistic speciation profiles, the CSN data collected at the Hawthorne monitor were applied to all of the FRM sites in the SLC nonattainment area. UDAQ believes this is a reasonable assumption that is supported by recently conducted special studies. Further discussion may be found in the Technical Support Document.

SMAT results are shown in **Table 6.1** for all projection years as well as the base year 2016.

¹⁵ <https://www.epa.gov/scram/photochemical-modeling-tools>

Monitor ID	Monitor Name	2016 Baseline DV	2017 Milestone FDV	2019 Future DV	2020 Horizon FDV
490030003	Box Elder	31.9	31.9	30.4	29.6
490110004	Bountiful	29.7	29.6	29.3	29.2
490351001	Magna	27.9	27.7	28.0	27.6
490353006	Hawthorne	34.3	34.4	33.8	33.8
490353010	Rose Park	36.3	36.2	35.9	35.6
490570002	Ogden #2	32.4	32.3	32.2	31.9

Table 1: Design values for base year and projected years. Purple numbers highlight design values greater than the NAAQS (35 $\mu\text{g}/\text{m}^3$).

Table 6.1: Design Values for base year and projected years. Purple numbers highlight design values greater than the NAAQS (35 $\mu\text{g}/\text{m}^3$).

Air Quality as of the Attainment Date

The attainment date for this Serious $\text{PM}_{2.5}$ nonattainment area is December 31, 2019.

The plan provisions for serious areas call, in Section 189(b)(1)(A), for a demonstration that the plan provides for attainment by the applicable attainment date, or if impracticable, by the most expeditious alternative applicable date practicable.

As shown in the modeled attainment test, the emissions reductions achievable in 2019 do not conclusively allow for a demonstration that the Salt Lake City, UT nonattainment area will attain the 24-hour $\text{PM}_{2.5}$ NAAQS. Although predictions at ~~[seven of the eight]~~all other monitors are less than 35.5 $\mu\text{g}/\text{m}^3$, the predicted concentration at the Rose Park monitor is still above the standard.

Nevertheless, the EPA acknowledges that there is other information that may be considered when determining whether attainment may be reached by the attainment date. This is discussed in the next section.

6.2 Weight of Evidence

The requirement for a plan revision that includes assessment of attainment in Section 189(b)(1)(A) calls for a demonstration, “including air quality modeling.” Despite the heavy reliance of photochemical modeling, there is other information that may be considered when determining whether attainment may be reached by the attainment date. The PM_{2.5} Implementation Rule notes that “the modeling guidance continues to describe the opportunity for states to supplement their modeling with a “weight of evidence” demonstration. States may use other information and analyses, in addition to the modeled attainment test to estimate whether future attainment of the NAAQS in an area is likely. Other analyses may include, but are not limited to emissions trends, ambient data trends and analyses, other modeling analyses and documentation of other non-modeled emissions control strategies including voluntary programs.” The following is an assemblage of such additional evidence in support of attainment by 2019.

Uncertainties in the Analysis

The underlying reason for suggesting other evidence is necessary to assess a finding of attainment, is the inherent uncertainty in a comprehensive analysis such as this. Each subset of information fed to the air quality model is developed using the best information available and steps are taken to minimize bias and uncertainty, but still involves some degree of estimation.

Emissions inventories make up a significant amount of this information. The approved methods of estimating emissions are continually improving, minimizing to a degree the uncertainties involved, and in some cases the information is quite good. Point sources in particular have a long history of testing results. Wherever possible, the actual stack test results or data from continuous emissions monitors is used to describe emissions. Where this is not feasible, measurements at similar sources have resulted in the development of emission factors that provide users with a good degree of confidence. This is particularly true of the criteria pollutants. Emissions from area sources, however, are far less certain. Estimation of emissions from particular categories of area sources has improved, yet the presence of such source categories within any given airshed is difficult to verify. Typically, population (or in some cases acreage) is used as a surrogate to estimate the amount of activity associated with such source categories. Naturally, this assumes a “standard” urban mix of these source categories that is applied to any given area, such as the Wasatch Front. Emissions from mobile sources are estimated through the use of models developed by EPA. EPA’s NONROAD model serves in that role to estimate emissions from mobile sources such as planes, trains, and miscellaneous non-road engines including construction equipment. Some of the information required by this model is easily verified, such as the number of take-offs and landings at each airport. However, much like any area source, the numbers of miscellaneous engines are estimated using population as a surrogate. MOVES2014a is the current model used to describe emissions from on-road mobile source emissions. These models are developed using both laboratory and in use testing, and again they make use of the most recent information available. Yet 2014a is already the 4th version of this model utilized by UDAQ in preparing its implementation plans, and before MOVES there were ten versions of the MOBILE model. Estimations of NO_x have differed significantly as one model replaced the next. Already there is some discussion that MOVES2014a may be

1 underestimating NO_x emissions from heavy-duty diesel vehicles, and that the model may
2 be revised again in the near future. Additionally, the development of the emission factors
3 for ammonia has undoubtedly received far less attention than those for NO_x, VOC, and
4 PM, itself. Another layer of uncertainty associated with the estimation of on-road mobile
5 source emissions originates at the transportation planning process. Agencies responsible
6 for efficient transportation planning employ what are called travel demand models to
7 forecast important parameters such as vehicle miles traveled, vehicle speeds on various
8 roadway types, and the number of trips made by the driving public. These are all
9 parameters that make use of the emission factors generated by the MOVES model.

10 *Meteorological data* is another subset of information necessary to run the air quality
11 model. It becomes necessary in any gridded model to describe the meteorology at the
12 boundary of every single grid cell in order to derive information about emission transport
13 and chemical activity. Naturally it is not practical to situate a weather station at all of
14 these locations, so the met-data that is available must be interpolated to generate the
15 information for the spaces in between. This task is performed with a whole other layer of
16 modeling. While this step in the air quality modeling is performed using the most
17 advanced techniques available, there is still an inherent degree of uncertainty. It is
18 simply not possible to ground-truth the results of the met-modeling. Furthermore, the
19 terrain surrounding the Salt Lake City nonattainment area is very complex due to the high
20 mountains and numerous canyon mouths that allow exchange with air from above in a
21 diurnal pattern.

22 *The Air Quality Modeling* itself is another potential source of uncertainty. In general
23 terms, the air quality model is approved for regulatory purposes and performs well
24 enough in reproducing concentrations experienced in historical episodes to make its
25 predictions in the projection years evaluated herein. Yet, it is still just a model. Any
26 model makes assessments of physical and chemical laws within each of its grid-cells.
27 There is no uncertainty about that. However, the atmosphere itself must be approximated
28 and is certainly more complex than the model can describe. Air quality modeling now is
29 far more accurate than it was in previous decades, but that only implies that there is still
30 room to improve. This is especially the case when considering the understanding and
31 description of photochemistry that is programmed into the model. The Salt Lake City
32 nonattainment area has such a high proportion of secondary chemistry at the heart of its
33 PM_{2.5} problem that any uncertainties associated with the photochemistry will certainly
34 become more prominent than for nonattainment areas that are less complex.

35 Furthermore, and in a synergistic way, our advances in the understanding of the various
36 photochemical pathways to PM_{2.5} also serve to underscore the afore-mentioned
37 uncertainties in the emissions inventory. As certain compounds reveal their importance
38 in these chemical reactions, it becomes clear that they may have been under-prioritized
39 when the inventories were compiled. These inventories have historically concerned
40 themselves with criteria pollutants such as NO_x and SO₂, and as noted they are generally
41 accurate in their assessment of these emissions. Yet it is becoming evident that
42 additional information will be required to support a greater understanding of secondary
43 PM_{2.5} formation. This is discussed in the next two sections.

44 ***Missing HCl and Cl from the Emissions Inventory:*** Both hydrochloric acid (HCl) and
45 aerosol chloride play an important role in PM_{2.5} formation. In the presence of excess
46 ammonia, HCl will partition to aerosol particles, ultimately forming ammonium chloride,

which has been shown to account for 10 – 15% of PM_{2.5} mass during high wintertime PM_{2.5} pollution episodes¹⁶. Aerosol chloride can also contribute to the formation of nitryl chloride (ClNO₂), a source of radicals which act to enhance the daytime photochemical production of ozone and nitrate, both of which are important contributors to PM_{2.5} formation. This formation of ClNO₂ is particularly active in the Salt Lake Valley, as shown by recent aircraft measurements (2017 Utah Winter Fine Particulate Study (UWFPS))¹⁷. Measurements of chloride indicate that it is significantly underestimated in the model; however, the sources of HCl and aerosol chloride are unclear, suggesting that significant sources of chloride and HCl are either not included or have been underestimated in the emissions inventory. Potential sources may include the Great Salt Lake, road salt, playa dusts from dry salt beds and the US Magnesium plant. An analysis of chemical speciation data collected at the Hawthorne site over previous years showed that the monthly average sodium ion and chloride concentrations overall increase with snowfall, suggesting that road salt may be a significant contributor to particulate chloride in winter. Emissions from road salt and the Great Salt Lake are not accounted for in the emissions inventory.

Measured HCl is also underestimated by the model, particularly in the vicinity of US Magnesium, where values as high as 100 ppb were observed during the 2017 UWFPS¹⁸. By contrast, CAMx expects that only 35ppm would be available to participate in the PM_{2.5} chemistry.

This apparent underestimation in chloride and HCl emissions adds uncertainty to the modeling results. By not accounting for these emissions and their impact on PM_{2.5} formation through the availability of various oxidants, the model's sensitivity to NO_x controls may be limited. The model is likely creating an oxidant-limited regime, and may therefore be less responsive to simulated NO_x controls.

UDAQ is planning a field sampling campaign during winter 2018-2019 and summer 2019 in order to improve the emissions inventory for chloride and HCl.

See the Technical Support Document for a more complete discussion of HCl and chloride.

Uncertainties in Ammonia Emissions: Ammonia is a key precursor to ammonium nitrate, the predominant (up to 60%) PM_{2.5} component during persistent wintertime inversion periods in northern Utah. While NO_x emission sources are generally well understood, there are many uncertainties surrounding the origins and distribution of ammonia emissions. This is examined in the following discussion of recent studies and current modeling progress.

2017 Utah Winter Fine Particulate Study Results: The scope of the UWFPS included all three air basins in northern Utah that are presently designated nonattainment for the 2006 24-hour PM_{2.5} NAAQS. Each of these nonattainment areas sees elevated concentrations of secondary PM as a result of cold pool meteorology. The study indicates that each of

¹⁶ Kelly, K.E., R. Kotchenruther, R. Kuprov, and G.D. Silcox, Receptor model source attributions for Utah's Salt Lake City airshed and the impacts of wintertime secondary ammonium nitrate and ammonium chloride aerosol. *Journal of the Air & Waste Management Association*, 2013. 63(5): p. 575-590.

¹⁷ <https://www.esrl.noaa.gov/csd/groups/csd7/measurements/2017uwfps/finalreport.pdf>

¹⁸ <https://www.esrl.noaa.gov/csd/groups/csd7/measurements/2017uwfps/finalreport.pdf>. Chapter 3.

these areas is most commonly nitrate limited (2017 UWFPS Final Report¹⁹). These findings are based on measurements made both on the ground and aloft. However, of the three basins, the Salt Lake Valley is nitrate limited to the least degree, exhibiting generally the largest ratio of total nitrate to reduced nitrogen. Measurements also show the Salt Lake Valley as having lower concentrations of ambient ammonia than the other two areas. This is illustrated in **Figure 6.10** with a comparison between Salt Lake and the Cache Valley. Concentrations in the Provo nonattainment area would likely sit between these other two.

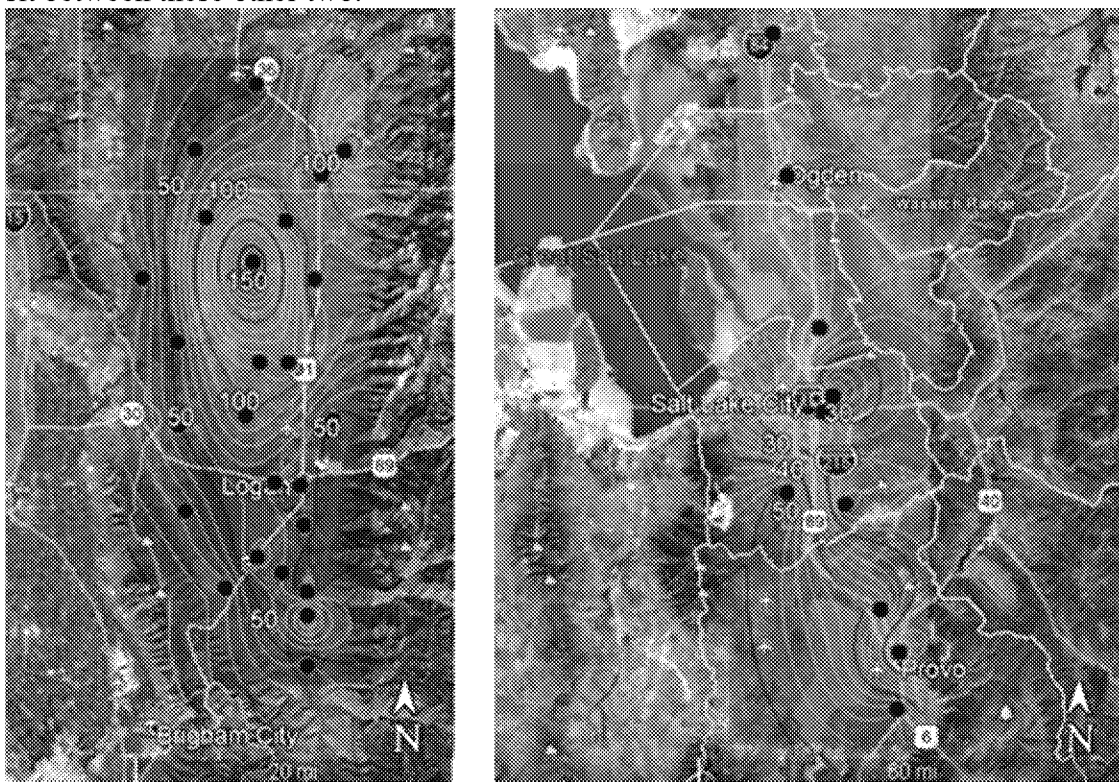


Figure 6.10: Contour plots of average ambient NH₃ concentrations [ppb] for Cache Valley and the Wasatch Front during the 2017 UWFPS. Panel comparison shows concentrations were much lower in the Salt Lake Valley (right) than Cache Valley (left). Sampler locations are depicted by black dots.

However, the emission inventory compiled for ammonia does not reflect these observed regional differences. This can be seen in **Figure 6.11**, where ammonia emissions for all three air basins appear to be more or less within the same range.

¹⁹<https://documents.deq.utah.gov/air-quality/planning/technical-analysis/research/northern-utah-airpollution/utah-winter-fine-particulate-study/DAQ-2018-004037.pdf>

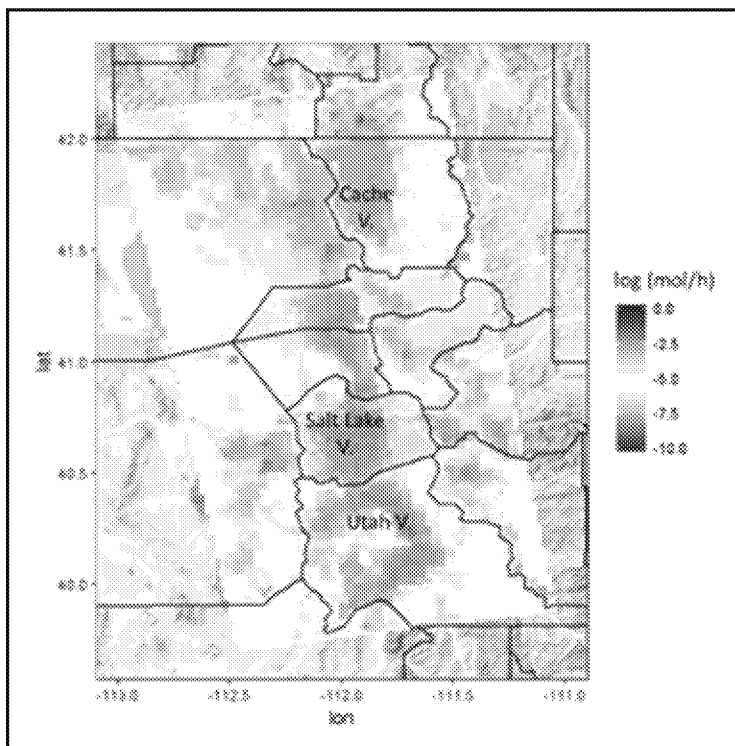


Figure 6.11: 24-hour average of 2014 NEI NH₃ emission rates (moles/hr) allocated across a 1.33 km Northern Utah modeling domain. Emission rates reflect a typical winter weekday in February. Ammonia injection is not included as to highlight the current state of the Utah ammonia emissions inventory.

Clearly, there is an inconsistency between the discernable information presented in **Figures 6.10 and 6.11**. Furthermore, using the emission inventory for ammonia depicted in **Figure 6.11**, CAMx was not able to re-create the observed concentrations of ammonium nitrate.

Ammonia injection: Recognizing that the emission inventory for ammonia was likely not very accurate, this discrepancy was addressed by adjusting the inventory until model results aligned more closely with the actual observations. This is achieved by artificially “injecting” non-inventoried ammonia emissions into the air quality model alongside the inventoried emissions.

In order to match modeled ammonia with observations at controlling nonattainment monitors, UDAQ used information from 2016 ammonia measurements (Dr. Randy Martin, Utah State Univ.) to determine how much ammonia would need to be injected. To account for the spatial differences observed through measurement, the injected ammonia is varied on a county-to-county basis. Also, ammonia is only injected in relatively low elevation areas (< 6,000 ft ASL) in order to better associate the missing ammonia with anthropogenic sources.

Ammonia deposition: Within the modeled simulation, ammonia is emitted and there is a temporal rate ascribed to the emissions. There is also however, an ascribed rate at which ammonia is removed from the system through deposition onto the ground. It is the combination of these two rates that determines the overall abundance of ammonia that would be available to participate in chemical reactions that lead to ammonium nitrate.

1 Early runs with the model were not able to re-create the concentrations of ammonium
2 nitrate that were observed at the monitoring stations. It seemed this was likely due to a
3 deposition rate that was too high, and more specifically that the modeled resistance to
4 such deposition was characterized as too low.

5 To address the high ammonia dry deposition rate in the air quality model, UDAQ
6 modified CAMx to maximize surface resistance to ammonia and keep as much free
7 ammonia available for chemistry as possible²⁰.

8 While it may be relatively simple to adjust the rates of deposition, and resistance thereto,
9 it is important to keep in mind that the real world is far more complex than what is
10 presently characterized in the model. The CAMx model does not currently account for
11 the re-volatilization of ammonia. Re-volatilization occurs when some forms of nitrogen
12 (e.g., urea) changes to an ammonia gas. Ammonia is then transported from soil and
13 emitted to the atmosphere.

14 *Why it matters to Utah air quality modeling:* Like the 2017 Utah Fine Particulate Study
15 (UWFPS) observations, UDAQ PM_{2.5} modeling also shows that the highest sensitivity to
16 ammonia is in Salt Lake Valley. This is perhaps due to the abundance of NO_x emissions
17 in the Salt Lake Valley compared to elsewhere in Utah. The Salt Lake Valley is more
18 urban and features a relatively small animal husbandry sector compared to Cache Valley.
19 The high abundance of NO_x emissions suggests that ammonia potentially plays a more
20 important role in secondary PM_{2.5} formation.

21 In the absence of any reliable measurements of ambient ammonia, the model
22 performance was used as an indicator of how much ammonia would be injected. In the
23 final configuration, fully 40% of the emission inventory was artificially introduced into
24 the SLC nonattainment area. This represents a large portion of ammonia about which
25 nothing is really known. The spatial location of its release and its deposition are
26 unknown. The temporal characteristics of its abundance are also poorly understood. This
27 includes any daily or seasonal fluctuations. By contrast, NO_x, the other chief constituent
28 of ammonium nitrate is very well characterized in both space and time. NO_x emissions
29 from motor vehicles are spatially distributed within the model to reflect the network of
30 roadways, and it is temporally reflective of vehicle usage by the hour of each day of the
31 week. Point sources of NO_x are precisely located on the grid, and include parameters that
32 affect its release such that a vertical distribution may also be assigned. Each source also
33 reports its hours of operation such that these emissions may be assigned a temporal
34 profile. This is the level of characterization expected in an analysis of this type, yet where
35 ammonia is concerned we see only a static quantity of homogenous distribution.

36 Furthermore, it is not possible to consider any long-term trends in ammonia emissions.
37 Therefore, unlike any of the other precursor pollutants, the amount of injected ammonia
38 is assumed to be identical in both base-year and future-year inventories. This has
39 importance beyond the relatively short span of time evaluated in the analysis for this SIP.
40 Downward trends in NO_x emissions are well established, and as will be discussed in
41 **section 6.9**, have been coincident with downward trends in PM_{2.5} concentrations. Since
42 such trends in PM_{2.5} are skewed by elevated wintertime concentrations it seems likely
43 that the SLC airshed has for a long time existed in a chemical regime that is in fact NO_x

²⁰ Recent versions of CAMx released by Ramboll now maximize the surface resistance to ammonia in order to lower the ammonia dry deposition rate. However, bidirectional flux is still not emulated in the model physics at this time.

(or in past times SO_2) limited. As noted above, this is also the conclusion of the UWFPS, although by comparison to Utah's other two airsheds perhaps less so. Certainly this is not a static condition, yet because of the uncertainties surrounding the origin of ammonia emissions, model projections into the future are left to compare trends in NO_x against a static quantity of ammonia. This should lead to some caution in accepting any prediction concerning a near-term change from what has been a NO_x limited environment to one that is limited by ammonia. This is perhaps especially so if such chemical regimes are described now with a resolution that varies by the hour of the day. The effect of holding the amount of injected ammonia constant potentially makes the model stiff and unresponsive to modeled reductions in NO_x emissions.

Although the 2017 UWFPS was helpful, more observational studies are needed to further our understanding of ammonia in Salt Lake Valley. The lack of reliable measurements of ammonia impairs UDAQ's ability to properly characterize ammonia in the atmosphere and thus, provides a weak basis for making improvements in Utah's ammonia emissions inventory.

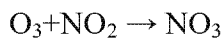
To help address some of this uncertainty, UDAQ plans to take ambient measurements of gaseous ammonia and hydrochloric acid (HCl) during the winter of 2018/2019 and the summer of 2019. Passive sampling will be focused on the Wasatch Front; twenty samplers alone placed within the Salt Lake City airshed. Additional measurements of $\text{PM}_{2.5}$ distribution and composition as well as mobile measurements of temporally-refined ammonia will also be conducted.

Missing Nitryl Chloride Chemistry Pathway in CAMx: Beyond the uncertainties in the emission inventories that support the analysis, other uncertainties within the air quality model itself also warrant some discussion. Recent measurements have shown that nitryl chloride (ClNO_2) formation, through the heterogeneous uptake of N_2O_5 onto particles containing chloride, is particularly active in the Salt Lake Valley. However, this is not accounted for in the carbon bond chemistry mechanisms within CAMx.

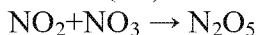
Halogens play an important role in $\text{PM}_{2.5}$ formation during wintertime inversion episodes. They act as radical sources important for the photochemical production of $\text{PM}_{2.5}$. ClNO_2 , in particular, is an important source of radicals for daytime photochemical production of ozone and nitrate, as shown by recent aircraft measurements conducted in the Salt Lake Valley (2017 UWFPS²¹). These measurements showed that ClNO_2 is typically elevated over the Salt Lake City and Provo urban regions, reaching mixing ratios greater than 0.8 ppb at night. Similar levels of ClNO_2 were also detected in the plume of the U.S. Magnesium plant. These measurements also suggested that the chemical pathway₁ where ClNO_2 is formed through the heterogeneous uptake of N_2O_5 on chloride-containing particles₂ is particularly active in the Salt Lake Valley, where ammonium chloride aerosol generally accounts for 10 – 15% of $\text{PM}_{2.5}$ mass during high- $\text{PM}_{2.5}$ episodes²². This formation of ClNO_2 occurs mainly at night since the formation of N_2O_5 , which is produced by a chemical reaction involving NO_2 and NO_3 , is suppressed during the day (R1-R3).

²¹ <https://www.esrl.noaa.gov/csd/groups/csd7/measurements/2017uwfps/finalreport.pdf>

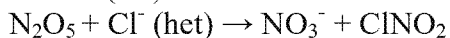
²² Kelly, K.E., R. Kotchenruther, R. Kuprov, and G.D. Silcox, Receptor model source attributions for Utah's Salt Lake City airshed and the impacts of wintertime secondary ammonium nitrate and ammonium chloride aerosol. Journal of the Air & Waste Management Association, 2013. 63(5): p. 575-590.



(R1)



(R2)



(R3)

Once produced ClNO_2 will then photolyze into chlorine radicals and NO_x , thereby contributing to the oxidant budget and NO_x recycling.

However, while this heterologous pathway for N_2O_5 uptake on Cl-containing particles is potentially important for $\text{PM}_{2.5}$ formation in the Salt Lake Valley, the carbon bond chemistry mechanisms in CAMx, including cb6r2h that was used in UDAQ's simulations, do not include this pathway. Given ClNO_2 's role in contributing to the oxidants budget, an exclusion of this pathway in CAMx may increase the model's sensitivity to oxidants and may limit its sensitivity to NO_x emissions. Without this pathway, the model may be less responsive to proposed NO_x controls.

Misrepresentation of Formaldehyde in the Model: The model's sensitivity to changes in NO_x emissions may be obscured by an under-estimation of formaldehyde during mid-day hours.

Carbonyls, such as formaldehyde, act as radical sources which are important for the photochemical production of $\text{PM}_{2.5}$ during wintertime inversion episodes in the Salt Lake Valley. The photolysis of these compounds may be important for daytime generation of radicals, as shown by recent observations^{23,24}. However, although formaldehyde is important for $\text{PM}_{2.5}$ formation, it may be underrepresented in the model during mid-day hours. Given that measurements of VOC species were not available during 2011, the modeling results were compared to observations conducted in winter 2017 at the University of Utah (2017 UWFPS). While these field study measurements from 2017 cannot be directly compared to day-specific 2011 model simulations, they're qualitatively useful to assess if the model predicts similar levels of VOCs during strong inversion conditions.

On average during peak $\text{PM}_{2.5}$ exceedance days, measured formaldehyde peaked at about 3 ppb around 11 am (**Figure 6.11**) while modeled formaldehyde displayed a concentration of 1.8 ppb (**Figure 6.10**) at 11 am. Modeled formaldehyde also displayed a temporal trend different from that of measured formaldehyde, with observations indicating direct emission as well as secondary production of formaldehyde. Similarly, modeled acetaldehyde exhibited a temporal trend different from that measured on peak $\text{PM}_{2.5}$ days. This comparison suggests that acetaldehyde and formaldehyde, an important source of radicals, may be underestimated in the model during mid-day hours. Given the role of formaldehyde in the generation of radicals, an underestimation of formaldehyde in CAMx may increase the model's sensitivity to oxidants.

²³ Baasandorj, M., S.W. Hoch, R. Bares, J.C. Lin, S.S. Brown, D.B. Millet, R. Martin, K. Kelly, K.J. Zarzana, C.D. Whiteman, W.P. Dube, G. Tonnesen, I.C. Jaramillo, and J. Sohl, Coupling between Chemical and Meteorological Processes under Persistent Cold-Air Pool Conditions: Evolution of Wintertime $\text{PM}_{2.5}$ Pollution Events and N_2O_5 Observations in Utah's Salt Lake Valley. Environmental Science & Technology, 2017. 51(11): p. 5941- 5950

²⁴ <https://www.esrl.noaa.gov/csd/groups/csd7/measurements/2017uwfps/finalreport.pdf>. Chapter 3.

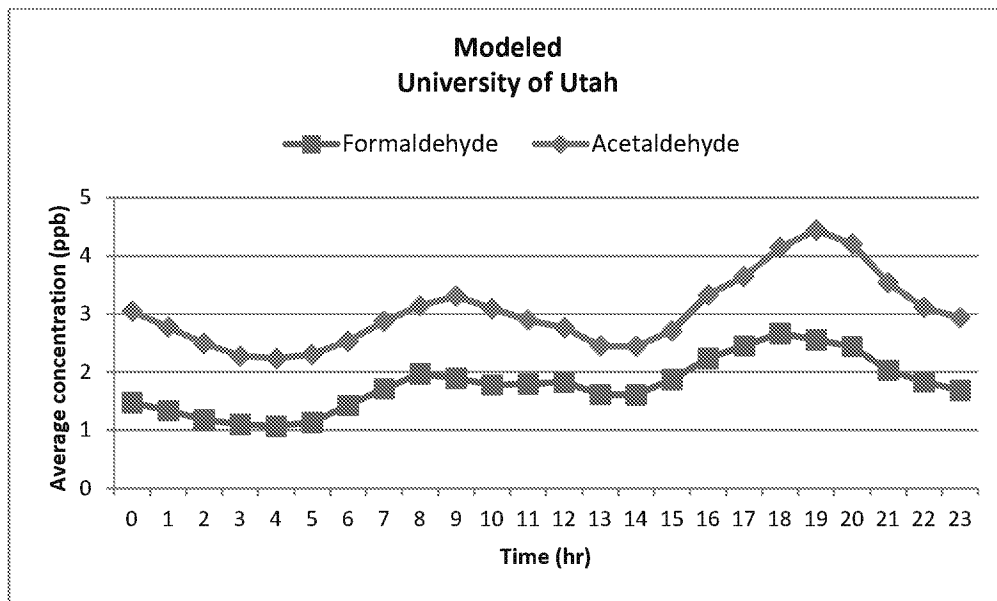


Figure 6.12: Hourly time series of average modeled formaldehyde and acetaldehyde during January 6-8 2011 at the University of Utah.

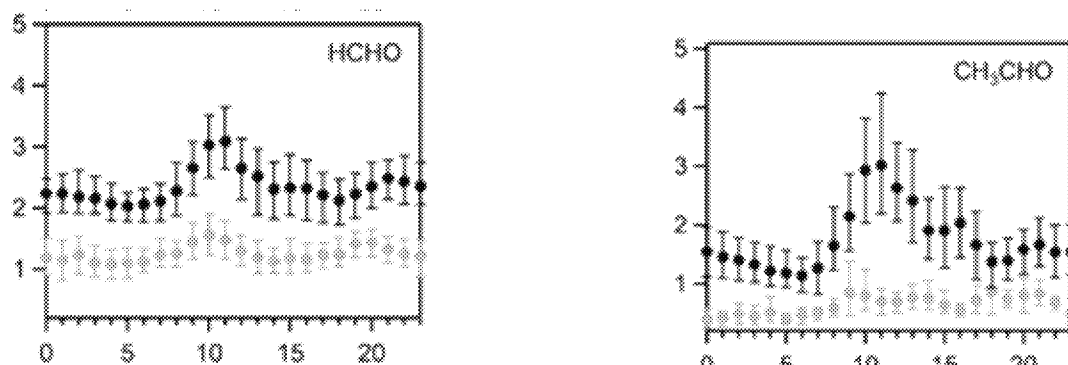
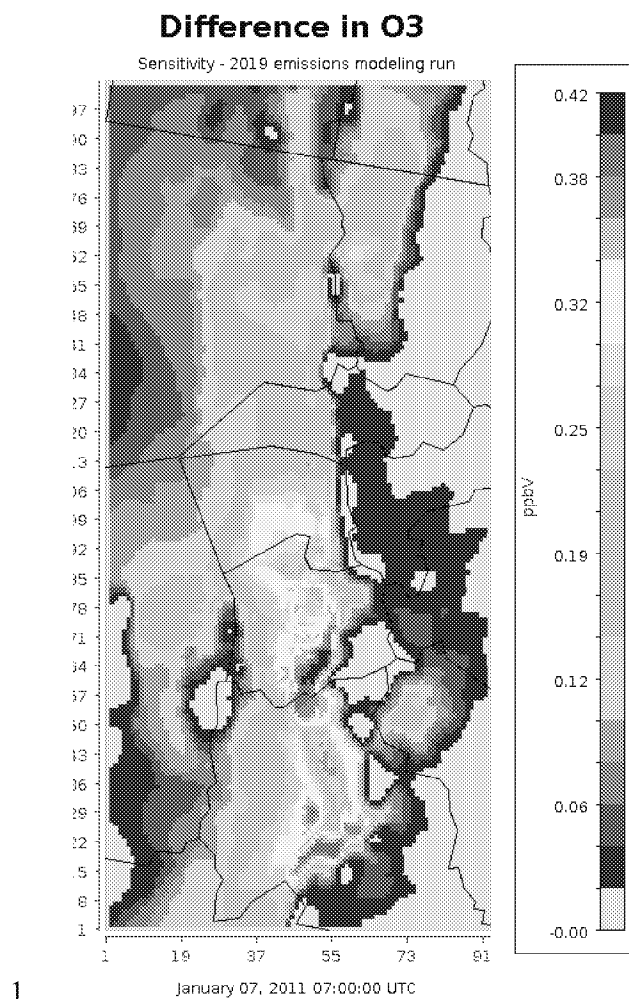


Figure 6.13: Diurnal trend of hourly averaged formaldehyde (HCHO) and acetaldehyde (CH₃CHO) measured at the University of Utah during polluted (black lines) and clean (green lines) conditions in winter 2017. Figure retrieved from the 2017 Utah Winter Fine Particulate Study, final report, Figure 3.59 (<https://www.esrl.noaa.gov/csd/groups/csd7/measurements/2017uwfps/finalreport.pdf>).

The model's sensitivity to formaldehyde emissions was further evaluated by conducting a modeling sensitivity run where formaldehyde emissions from all sectors were increased by 50%. Formaldehyde emissions from the 2019 inventory were considered for this sensitivity simulation. Both modeled ozone and nitrate (**Figure 6.14**) increased after increasing formaldehyde emissions, suggesting that the model is oxidant-limited and may have a limited sensitivity to a reduction in NO_x emissions. An underestimation of formaldehyde will lead to an underestimation in the production of HNO₃, leading to a reduced response to proposed NO_x controls.



1

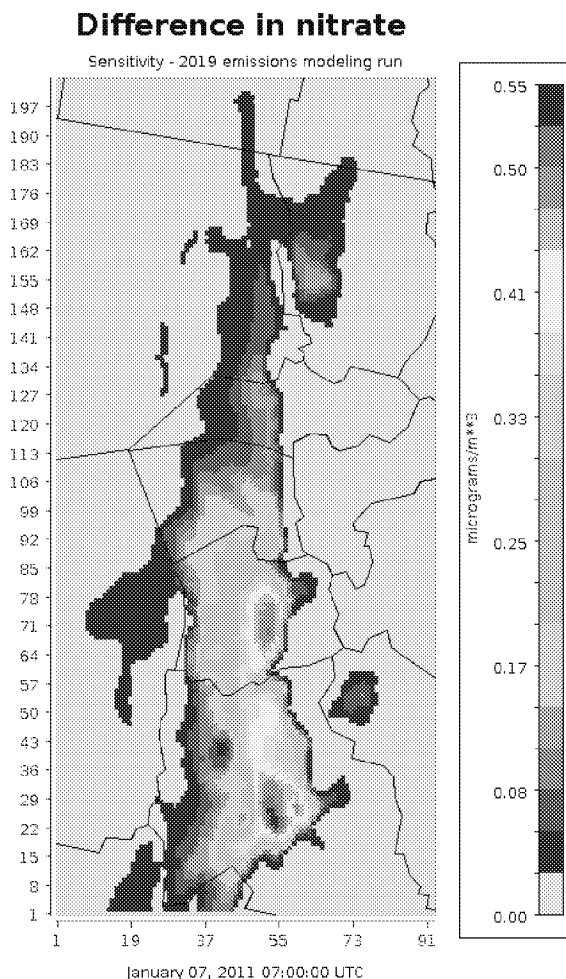
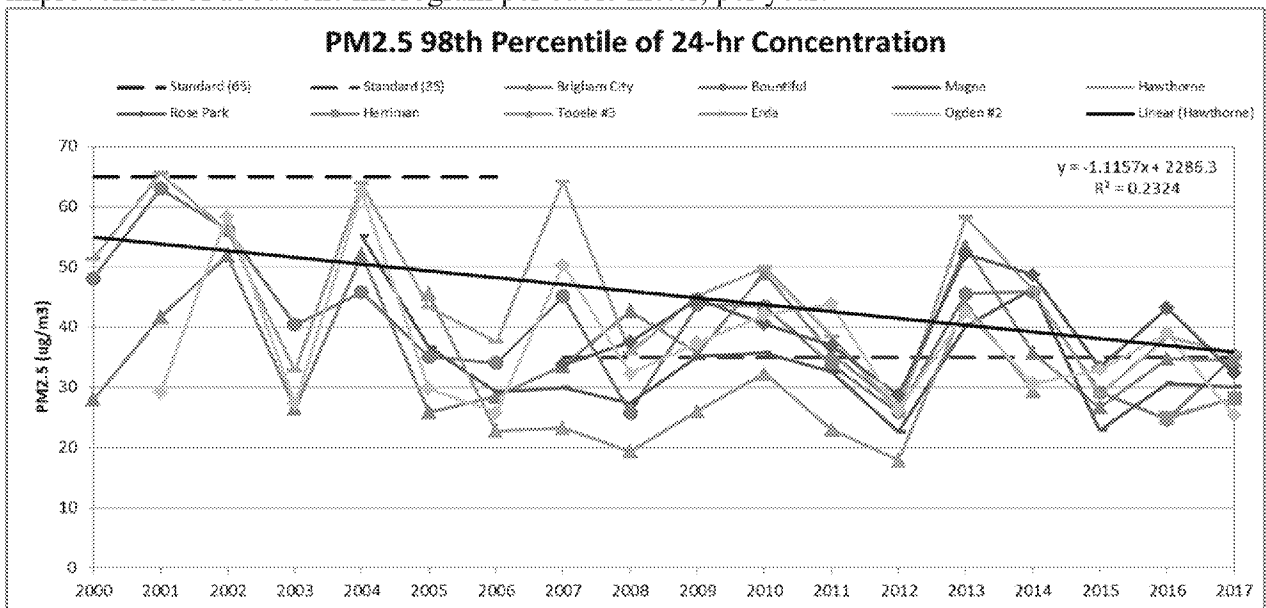


Figure 6.14: Spatial plots of the difference in mean ozone and nitrate levels between the sensitivity modeling run, where formaldehyde 2019 emissions were increased by 50%, and the 2019 emissions modeling run, where formaldehyde emissions were kept unchanged. Plots are shown for January 7 2011.

Trends in Monitored Data

Certainly the most significant information to assess would be the ambient air quality data collected throughout the nonattainment area, and in particular, any observable trends in the data. The Salt Lake City nonattainment area is designated such only for the 24-hour health standard, so it should be simple to focus on the 24-hour $PM_{2.5}$ values. This, however, is somewhat confounding because of the nature of the problem. As described in Section 1.3, concentrations in excess of the 24-hour NAAQS are only incurred during winter months when cold-pool conditions drive the formation of and trap secondary $PM_{2.5}$. The actual cold-pool temperature inversions vary in strength and duration from year to year, and the $PM_{2.5}$ concentrations measured during those times reflect this variability far more than they reflect gradual changes in the emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors. This variability may easily be seen in **Figure 6.15** below. Still, if one fits a line through the data collected at the Hawthorne site, the NCORE site for the SLC

1 metropolitan statistical area, the trend is noticeably downward and indicates an
 2 improvement of about one microgram per cubic meter, per year.



3
 4 **Figure 6.15 Trend in Monitored PM2.5 (98th Percentiles of 24-hour Concentrations)**

5
 6

This episodic variability is generally removed by looking at annual mean values of PM_{2.5} concentrations as shown in **Figure 6.16**. This data is still skewed more by winter data than summer data. It includes all of the high values identified as the 98th percentiles, as well as the values ranked even higher. Still the trend is downward. Fitting a line through the data collected at the Hawthorne site reveals a trend that is noticeably downward, and indicates an improvement of about 4.5 micrograms per cubic meter, over the 17-year span. Such improvement is noteworthy in the face of this area's rapid growth in both population and vehicle miles traveled (vmt).

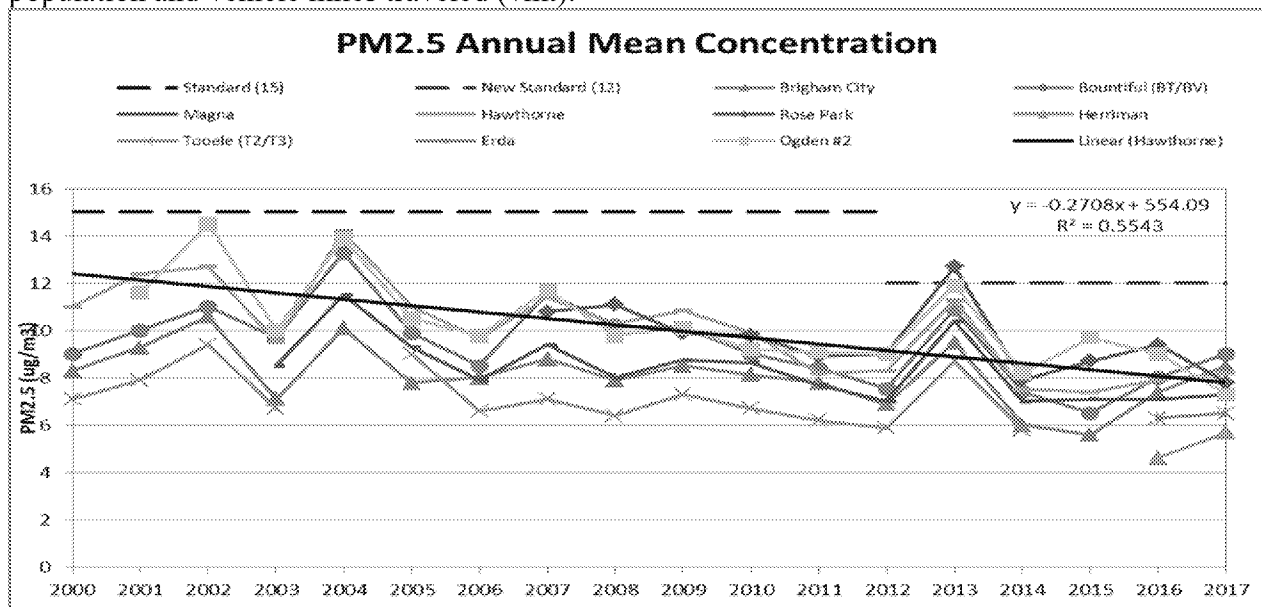


Figure 6.16 Trend in Monitored PM_{2.5} (Annual Mean Concentrations)

UDAQ also monitors two of the four PM_{2.5} precursors, NO_x and SO₂, and it is also useful to observe the trends in their concentrations.

Figures 6.17 and 6.18 chart trends in nitrogen dioxide, from which NO_x concentrations may be inferred. Whether measured as peak concentrations or long-term averages, the trend has remained steadily downward for a long time.

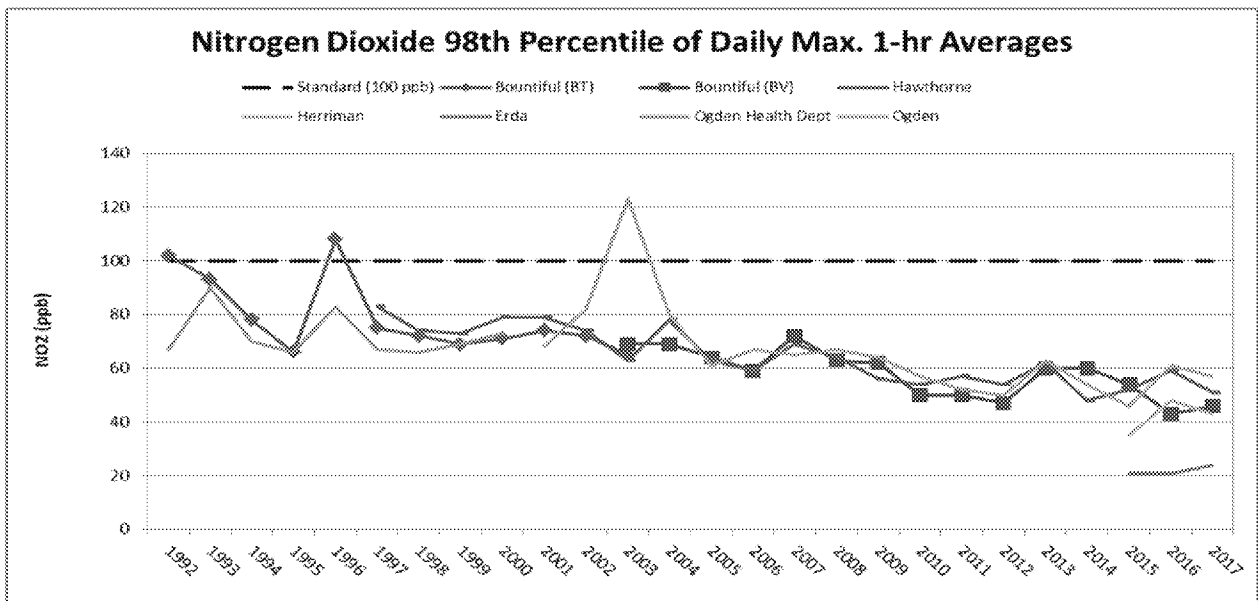


Figure 6.17 Trend in Monitored NO2 (98th Percentiles of Daily 1-hour Max.)

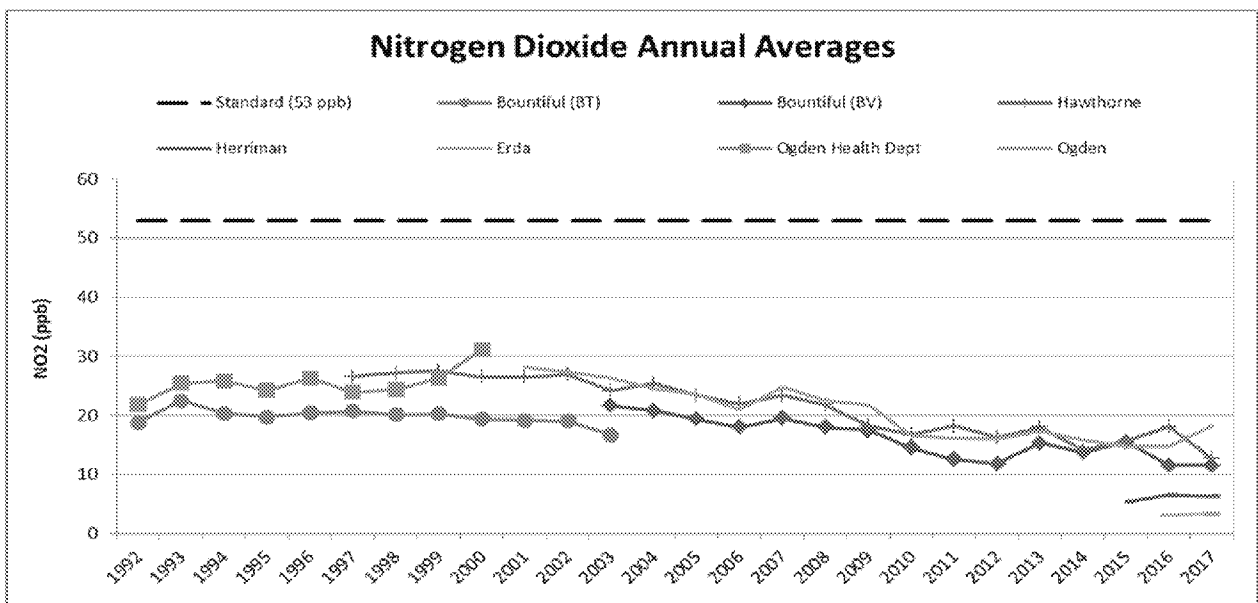


Figure 6.18 Trend in Monitored NO2 (Annual Averages)

Sulfur dioxide has also diminished over time, from a sharp decline in the 1990s to a steady degree of progress over the last 20 years. This is shown in Figure 6.19.

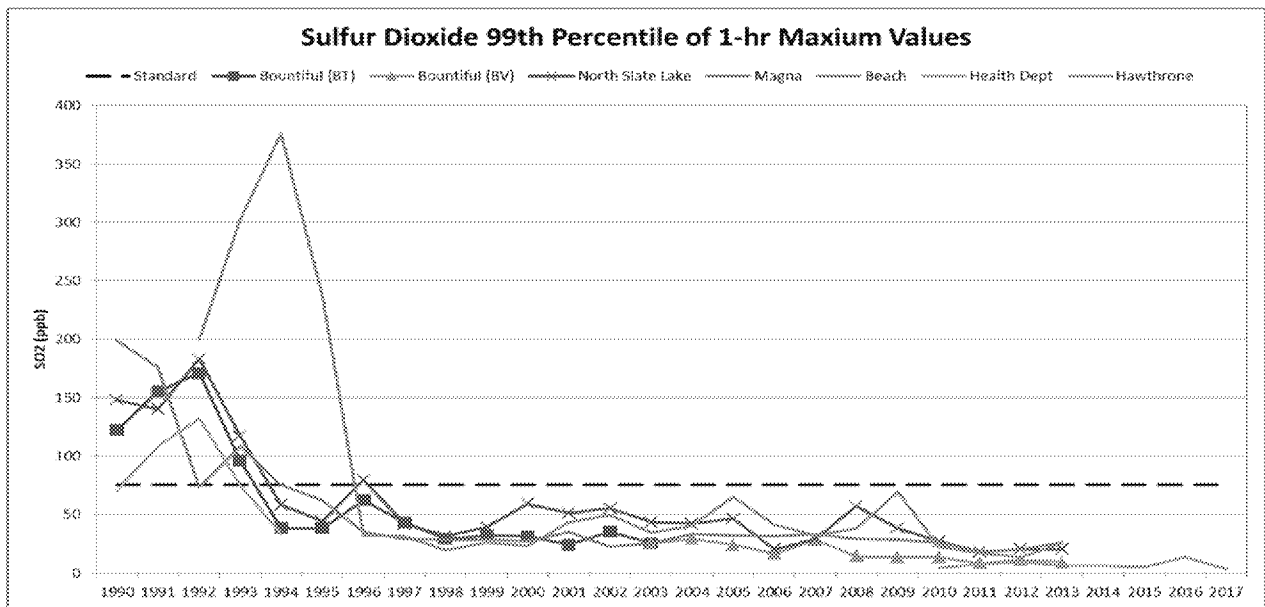


Figure 6.19 Trend in Monitored SO₂ (99th Percentiles of Daily 1-hour Max)

Trends in Emissions

Another way to evaluate trends in air quality is to compare inventories of emissions on a periodic basis. For purposes of this SIP, UDAQ has developed a suite of emissions inventories for several years between 2011 and 2024. These inventories are based on the 2014 tri-annual emissions inventory and are tailored to suit wintertime conditions pertinent to this SIP. Specifically, these emissions inventories reflect winter weekday emissions for all five Salt Lake nonattainment area counties and include parts of the counties that are outside the nonattainment boundary. For this reason, the values shown here may not match nonattainment area emissions summaries shown elsewhere in this document. Still, these emission inventories provide a useful tool for comparing emissions trends over time.

Figure 6.20 below charts the emissions of NO_x, VOC, PM_{2.5} and SO₂ throughout the period of time represented in some way by this Serious Area SIP.

Because wintertime emissions inventories are unavailable prior to 2011, it is useful to consider the tri-annual emissions inventories routinely compiled by UDAQ to evaluate longer-term emissions trends.

Annual emissions trends from the 1999-2014 tri-annual inventories for the five Salt Lake nonattainment area counties are shown in **Figure 6.21** below.

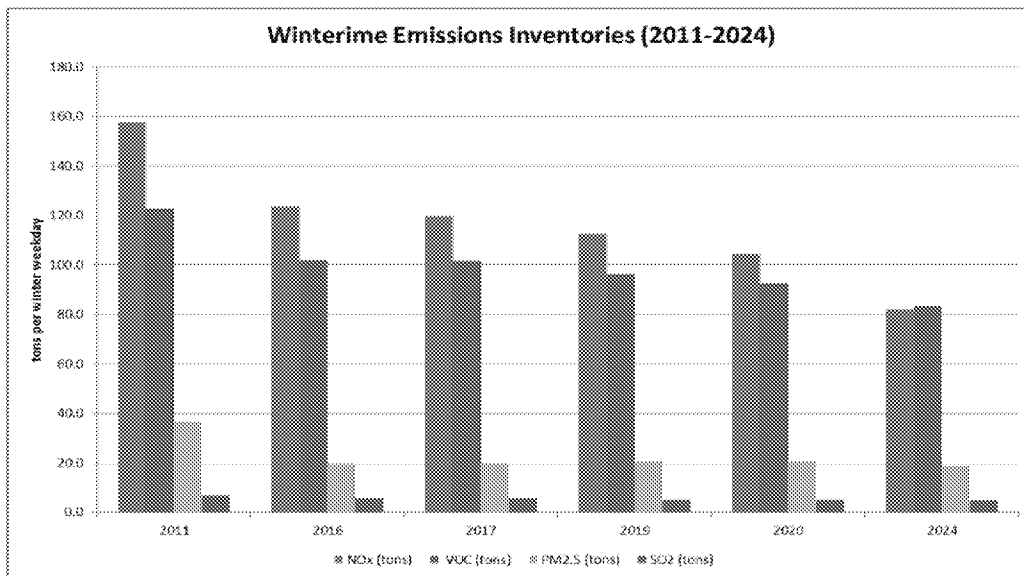


Figure 6.20 Emissions Trends (2011 – 2024)

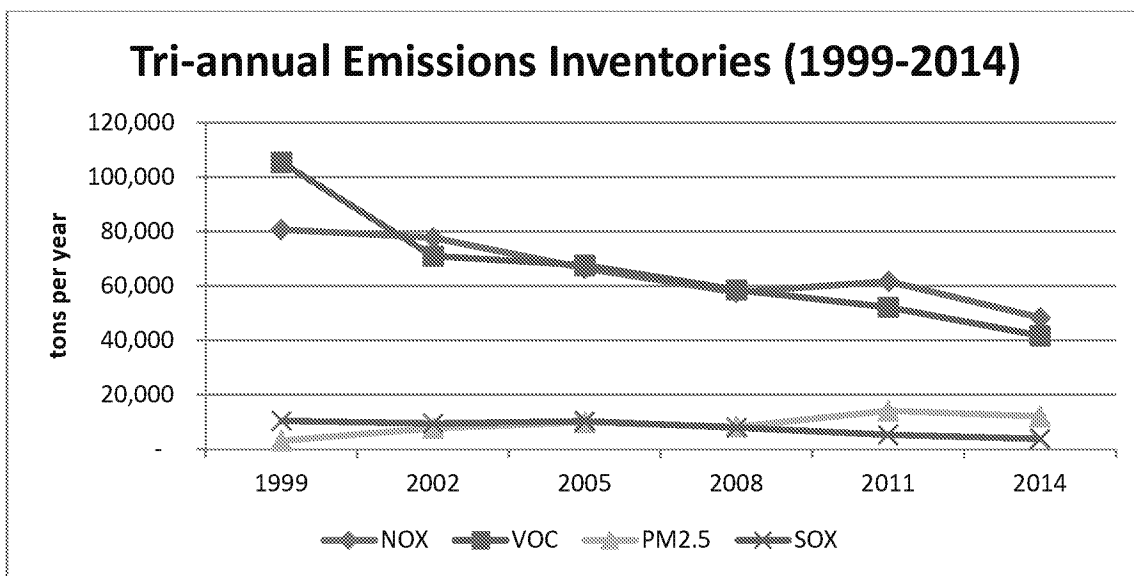


Figure 6.21 Emissions Trends (1999 – 2014)

Seen together, **Figs. 6.20 and 6.21** illustrate trends in $PM_{2.5}$ and $PM_{2.5}$ precursor emissions that reach back almost as far as the establishment of $PM_{2.5}$ as the indicator of fine particulate matter.

Qualitatively, it is easy to see that NO_x and VOCs are emitted in much larger quantities than are $PM_{2.5}$ or SO_2 . Also, the trend in each of these $PM_{2.5}$ precursors has been steadily downward for roughly the last 20 years. This is largely attributable to Tiers 1 and 2 of the federal motor vehicle control program, but there are other drivers.

Looking back at the trend charts showing ambient NO_x concentrations (**Figures 6.17 and 6.18**), one finds good agreement between the diminishing emissions and the ambient NO_x .

1 UDAQ does not monitor ambient concentrations of VOC, but one would assume that the
2 reductions in VOC emissions would be detected as a continuous trend over this same
3 period.
4 Where SO₂ is considered, it is again useful to refer back to **Figure 6.19** where the
5 ambient concentrations are charted. Here one may observe that by 1999 the airshed had
6 seen an end to what had been a history of NAAQS violations due to very large emissions
7 of SO₂ at a local copper mine. This decline in ambient concentrations was driven first by
8 a SIP addressing SO₂ itself in 1982, and then by a focus on SO₂ control in a 1992 PM₁₀
9 SIP that required SO₂ reductions at not only the copper smelter, but also five oil refineries
10 and a steel mill. From 1999 forward, SO₂ emissions and SO₂ concentrations have
11 remained relatively flat, perhaps trending slightly downward, but at levels that might be
12 described as “background”.
13 PM_{2.5} emissions have also remained somewhat constant over this period, perhaps even
14 trending upward. It is instructive, therefore, to refer back to **Figs. 6.15 and 6.16** showing
15 the monitored trends in ambient PM_{2.5} concentrations.
16 Both of these charts show that PM_{2.5} concentrations have been declining over the same
17 span of time depicted in the emissions trends charts.
18 Taken together, this would suggest that the persistent decline in NO_x and VOC emissions
19 is most directly responsible for the commensurate improvement in PM_{2.5} concentrations,
20 particularly with respect to the secondary PM_{2.5} that dominates the highest exceedances.
21 Throughout any calendar year, PM_{2.5} concentrations in Northern Utah exhibit a
22 background level well beneath the annual standard, marked by episodes of very high
23 concentrations predominantly in the months of December through February which are
24 dominated by secondary PM_{2.5} (**as shown in Figure 6.2.2**). Since the early 1990s, Utah
25 has addressed these “spikes” in fine particulate by focusing emission control on precursor
26 emissions (SO₂, and NO_x), and maintained that by reducing the magnitude of such
27 exceedances that the annual standard (which has never been violated) would be kept in
28 check. This seems to have been supported by the data concerning both emissions and
29 concentrations.
30 Over this same period of time, it has always been assumed that the Salt Lake City airshed
31 was NO_x (or even SO₂) limited with respect to the atmospheric chemistry that supports
32 formation of secondary PM during periods of cold pool meteorology.
33 Looking forward at the emissions projected in **Figure 6.20**, one will see a continuation of
34 the trends of NO_x and VOC emissions, from the present out to 2024. Again, this reflects
35 the continued implementation of Tier 2 standards and now the introduction of Tier 3.
36 Given the apparent co-benefit of ambient PM_{2.5} improvement between 2000 and 2017,
37 one would expect this co-benefit to continue between now and 2024.
38 Additionally, direct PM_{2.5} emissions are projected to decrease from 20.5 tons per winter
39 weekday in 2019 to 19.0 tons per winter weekday in 2024, and SO₂ emissions are
40 projected to decrease from 5.2 tons per winter weekday to 4.9 tons over the same span.

41 Supplemental Analyses

42 *Additional Modeling Result / Exceptional Event*

43 As discussed in Chapter 3, data captured during the years important to the SIP was
44 initially found to be invalid for a number of reasons, including some values identified by

UDAQ is perhaps being influenced by exceptional events (EEs). EPA's Exceptional Events Rule allows for data that has been heavily influenced by wild land fires, fireworks, etc. to be excluded from the data set in its use for regulatory purposes. The rule requires that states first identify such incidences by affixing a flag to the data it submits, and then submit supporting documentation for EPA to consider. If EPA concurs with the state, it will affix a second flag to the value.

As mentioned already in the discussion surrounding **Tables 3.1 and 3.2**, UDAQ has flagged several values in 2017 that have yet to be concurred with, but with agreement from EPA, excluded these values from the Monitored Design Value (MDV) calculations. There is, however, another value in 2015 that may warrant additional scrutiny. August 20, 2015 was a day influenced by wildland fire. In fact, UDAQ flagged and documented a number of values affected by that event at other monitoring stations (Logan, Brigham City and Ogden). Although smoke from wildfires filled all of Northern Utah, only these three monitors recorded exceedances of the NAAQS. UDAQ; however, UDAQ believes that all monitors in Northern Utah were impacted by smoke.

Even though monitored values at Rose Park were impacted by the smoke event, UDAQ did not flag the value collected at Rose Park because those values did not exceed the standard. This value presently sits as the 8th highest value collected at Rose Park during 2015, and is identified as the 98th percentile value for that year. The reason this value was not flagged is because, at 33.3 µg/m³, it did not exceed the 24-hr NAAQS; perhaps an oversight on the part of UDAQ.

Nevertheless, if this value were to be documented as an exceptional event, the 98th percentile value for Rose Park would become the next highest value which was measured as 31.2 µg/m³, a difference of 2.1 µg/m³. Furthermore, when averaged with the 98th percentile values for 2016 and 2017, the 3-year Monitored Design Value (MDV) for Rose Park would drop from 36.3 to 35.6 µg/m³.

Taking the next step and applying the Relative Response Factor (RRF), calculated for 2019 by the CAMx model, to the reduced MDV, would yield a lower prediction for the future concentration in 2019. This is shown in **Table 6.2**.

Rose Park Monitor	98th Percentile Values (µg/m ³)			2016 Baseline DV	2019 Future DV
	2015	2016	2017		
As presented in Table 6.1	33.3	43.2	32.4	36.3	35.9
Excluding data from 8/20/15	31.2	43.2	32.4	35.6	35.2

Table 6.2 Air Quality Modeling Results; as affected, or not, with the inclusion of data potentially qualifying as an Exceptional Event

The predicted concentration at Rose Park for 2019, the attainment year, was just over the NAAQS at 35.9 µg/m³ (see **Table 6.1**). This of course was the controlling monitor within the nonattainment area, and accounted for the only value in the analysis that was over the 24-hour standard.

Using the new MDV, with the value for August 20, 2015 excluded as an EE, would change the prediction for 2019 to 35.2 µg/m³ and change the conclusion of the modeling

1 result to a likelihood of attainment by 2019 (35.5 rounds up to 36... numbers below 35.5
2 round to 35).

3 How likely is it then, that this value could actually be excluded as an EE? It's true that
4 33.3 does not exceed the 24-hour standard (35 $\mu\text{g}/\text{m}^3$), and for only this reason did
5 UDAQ not include the value for Rose Park in the documentation compiled for that event,
6 yet it is greater than the annual NAAQS.

7 EPA has acknowledged that even if a value does not exceed the standard for a 24-hr
8 averaging period, it may still affect a determination of compliance with the 24-hr
9 standard. This is certainly true of the $\text{PM}_{2.5}$ standard, where the form of the standard
10 requires the averaging of three distinct 24-hr values. In such cases, EPA indicates that
11 the level of a longer averaging period, in this case the annual standard, can serve as the
12 cut-point for whether the rule may be used to determine that the value was influenced by
13 an exceptional event. In fact, this interpretation was codified into the EE rule, but not
14 until 2016, after the event in 2015.

15 Whether in fact this value receives additional attention in the data set, it remains pertinent
16 to a discussion surrounding a weight of evidence to be considered in the assessment of
17 whether attainment of the $\text{PM}_{2.5}$ standard can likely be reached by the attainment date in
18 2019.

19 Overstated Conservatism in Projected Emissions:

20 We have mentioned some of the uncertainties inherent in the modeled demonstration of
21 attainment already. However, there is another aspect of the analysis that bears some
22 mention, and that is the conservatism that is also built into such a demonstration.

23 The SIP is a legal document, with consequences to be enforced in the event certain
24 conditions are not met. For this reason a certain amount of conservatism is built into the
25 estimates used to construct the attainment demonstration, its quantitative foundation.
26 Thus, the discussion herein is not to suggest that such conservatism is misplaced. Rather
27 it is to help, in the context of evaluating a weight of evidence, where perhaps one might
28 give more or less weight.

29 The aforementioned conservatism might be broken into two distinct categories: 1)
30 overstating the emissions to be expected throughout the projection years, and 2)
31 omission of some controls that are expected to help mitigate $\text{PM}_{2.5}$ concentrations, but
32 which may not be suited to the assignment of SIP credit. Examples of each are presented
33 below.

34 Emissions from Point Sources – are depicted differently in the base-year inventory than
35 they are in the projection-years. Actual emissions are used in the base-year, whereas the
36 SIP takes more of a worst-case view of these emissions in the projection years and uses in
37 some cases the legal potentials to emit. While this makes legal sense, it tends to overstate
38 a somewhat artificial “growth” in emissions from this sector.

39 Actually, most point sources included in this analysis were already operating in the base
40 year at or near their potentials to emit. Therefore, emissions from these sources remained
41 essentially flat throughout the analysis period.

42 Emission totals for the point source category did in fact exhibit some growth between
43 2016 and 2019. $\text{PM}_{2.5}$, NO_x , and VOC emissions increased by 20, 14, and 13 percent.

44 Virtually all of this increase is shown to be associated with three sources that were not

1 operating near their respective PTEs in 2016, Hill Air Force Base, Proctor & Gamble,
2 and Kennecott. The inventories are detailed in the technical support document.
3 On-Road Mobile Source Emissions – like point sources, are legally bound to remain
4 within the emission totals that are included in the SIP. This leads to some conservatism
5 in the establishment of the projected emissions. Actual data is available to calculate
6 emissions in the base-year, whereas projections are made using a travel demand model to
7 estimate what emissions will likely be in the future. Transportation planning considers
8 time horizons well beyond those used for air quality planning, and many assumptions are
9 made when projecting transportation tendencies well into the future.
10 Again this makes legal sense, but tends to overstate a somewhat artificial “growth” in
11 emissions from this sector.
12 In addition to the assumptions inherent in a travel demand model, there is another factor
13 at play concerning mobile source emissions in the Salt Lake Valley. Tier 3 of the federal
14 motor vehicle control program becomes effective in 2017, and it requires refiners of
15 gasoline to limit the sulfur content of the fuel in order to achieve better overall
16 performance in catalytic converters. The default value for sulfur in fuel beginning in
17 2017 is 10 ppm. The limit under Tier 2 had been 30 ppm. All of the refiners in the Salt
18 Lake Valley are small (< 75,000 barrels per day) and have until 2020 to comply with the
19 Tier 3 sulfur limit. Furthermore, corporate producers may average their compliance over
20 the aggregation of their individual refineries. This means there is no legal guarantee that
21 the Salt Lake Valley will see the Tier 3 fuel slated for 2017, even by 2020. For this
22 reason, mobile source emissions in the analysis underlying the attainment demonstration
23 were assumed to remain at 30 ppm. This is a conservative approach that feeds the air
24 quality model more emissions in 2019, the attainment year.
25 UDAQ used the model to assess what affect some of this conservatism may be having on
26 the determination of attainment.
27 No adjustments were made to the point source emissions, but for 2019, on-road mobile
28 sources were adjusted by first assuming a 5% reduction to vehicle-miles-traveled (VMT)
29 throughout the nonattainment area. Secondly, the fuel sulfur parameter was changed in
30 MOVES from 30 ppm to 10 ppm.
31 **Table 6.3** lists the reduction percentages in on-road mobile emissions using the
32 modifications in VMT and fuel sulfur content.

On-road Mobile Emissions Reduction in the Salt Lake Nonattainment Area				
PM _{2.5}	NO _x	VOC	NH ₃	SO ₂
4%	12%	4%	5%	60%

Table 6.3: Percentage of 2019 on-road mobile inventory reduced in Salt Lake nonattainment area by lowering VMT by 5% and reducing fuel sulfur loading to 10 ppm. Reductions are with respect to on-road mobile sector only.

UDAQ re-ran the SMAT-CE v1.01 tool to develop another set of future design values, which could be compared to the existing set for 2019. **Table 6.4**, below, shows this comparison.

At both the Rose Park and Hawthorne monitors, these adjustments to the on-road mobile source inventory effectively decreased the predicted future design value by 0.2 µg/m³.

While notable, a decrease of this magnitude would not change the conclusion of the modeled attainment test. However, it does serve to illustrate that the result presented in the attainment test is likely conservative by at least this amount.

In addition, this exercise serves to underscore the insensitivity of the air quality model to what might be considered significant reductions in NO_x emissions throughout the Salt Lake City nonattainment area.

Monitor Name	Monitor ID	County	Baseline DV	Future DV (2019 baseline)	Future DV (5pVMT_10ppm)
Brigham City	490030003	Box Elder	31.9	29.4	28.4
Bountiful	490110004	Davis	29.3	29.3	29.2
Magna	490351001	Salt Lake	27.8	28	27.7
Hawthorne	490353006	Salt Lake	34.3	34.4	34.2
Rose Park	490353010	Salt Lake	36.7	36.5	36.3
Ogden #2	490570002	Weber	32.1	31.7	31.4

Table 6.4: Comparison of future design values using two different 2019 on-road mobile emissions inventories: baseline (Column 5), reduced VMT and fuel sulfur content (Column 6).

Note that the future design values presented in the column labeled (2019 baseline) do not exactly agree with those presented in section 6 as the modeled attainment test.

Additional refinements were made to the entire analysis between the time this exercise was completed and the final modeling runs. Nevertheless, one would not expect these refinements to change the 0.2 µg/m³ result of the exercise.

Controls Unaccounted for in the SIP:

Another example of conservatism in the analysis would be the omission of certain control measures that would be expected to improve air quality. Again, these controls were not

1 made part of the quantitative attainment demonstration because they are not suited to the
2 assignment of SIP credit. Still, they are expected to mitigate PM_{2.5} concentrations.

3 Examples include:

4 VW Settlement Monies

5 Utah is a beneficiary of over \$35 million of the Volkswagen Diesel Emissions
6 Environmental Mitigation Trust as a result of over 7,000 of the non-compliant VW cars
7 operating in Utah. Utah has allocated \$25.7 million of this funding specifically for heavy-
8 duty diesel vehicle replacements. The goal for the settlement money is to fully mitigate
9 the excess lifetime NO_x from the non-compliant vehicles that operated in Utah. PM_{2.5} and
10 VOC reductions will occur as well by removing old diesel vehicles from operation.
11 It is estimated that the non-compliant cars in Utah emitted between 351-1,556 tons of
12 excess NO_x. Depending on VW project applications and selection, Utah has the
13 opportunity to reduce between 351-1,556 tons of NO_x, between 26-115 tons of PM_{2.5}, and
14 between 35-156 tons of VOCs. Utah expects to accomplish these reductions in calendar
15 years 2019-2024. The projects will be focused in Utah's nonattainment areas, with
16 greater weight applied to areas of the state that bear a disproportionate amount of the air
17 pollution burden.

18 Utah has an additional \$1.4 million in funding for projects such as lawnmower and
19 snowblower exchanges, where gas-powered equipment is exchanged for electric
20 equipment at a reduced cost.

21 Targeted Airshed Grant Money

22 The EPA has awarded the State over \$9.5 million to reduce pollution from woodstoves.
23 The UDAQ will use the funding to offer Utah residents generous financial incentives to
24 convert their woodstoves and fire places to cleaner sources of heat. Changing-out an old
25 uncertified woodstove for an EPA-certified stove can reduce the amount of PM_{2.5} by as
26 much as 60%. Converting a wood stove to a natural gas stove is even more beneficial,
27 reducing PM_{2.5} by 99.9%.

28 Estimates show that the five year program will result in: 1) the destruction or recycling
29 of 503 wood-stoves/inserts, 2) conversion of 496 wood-burning units to gas stoves, and
30 3) replacement of 1,006 uncertified wood stoves/inserts by EPA-certified wood-burning
31 appliances. On a yearly basis, the change-out program would result in the
32 destruction/recycling of 101 units, conversion of 99 wood-burning units to gas-fueled
33 devices as well as the replacement of 201 uncertified wood-burning units by EPA-
34 certified ones.

35 Implementation of the program is expected to result in the reduction of nearly 72% (or 18
36 tons) of PM_{2.5} and 87% (or 36 tons) of VOCs emissions from wood-smoke over the
37 duration of the program. This is equivalent to a reduction of about 3.6 and 7.3 tons/year
38 of PM_{2.5} and VOCs from wood-smoke, respectively.

40 Diesel Emission Testing

41 Currently there are three counties within the Salt Lake City Nonattainment Area (Davis,
42 Salt Lake, and Weber) that have implemented a diesel emission inspection program.
43 Each of the three programs is administered by its local health department, which may
44 manage its program somewhat differently than the others. Although each is an
45 independent program, they all share the same purpose of improving air quality through
46 the detection and repair of excessively emitting vehicles.

In Davis County, all light, medium and heavy duty diesel powered vehicles are required to undergo an emission test. The program consists of an On-Board Diagnostic (OBD) and visual tampering inspection for model year 1996 and newer light duty (under 8,500 lbs Gross Vehicle Weight Rating (GVWR)) diesel vehicles and model year 2008 and newer medium duty (between 8,501 and 14,000 lbs GVWR) diesel vehicles. Davis also tests model year 1968 to 2007 medium duty diesel vehicles using an opacity inspection test using a dynamometer, and finally, 1968 and newer Heavy Duty vehicle (over 14,001 lbs GVWR) are tested using Society of Automotive Engineers (SAE) J1667 or snap acceleration procedure. Salt Lake County's diesel program consists of an OBD and visual tampering inspection for 1998 and newer light and medium duty diesel powered vehicle 14,000 lbs GVWR and less. Salt Lake County also tests 1968 and newer Heavy-Duty diesel vehicles over 14,001 lbs GVWR using the SAE J1667 Snap Acceleration Smoke Test Procedure. Weber County's program consists of an OBD inspection for 2008 and newer vehicles light-and medium duty vehicles (under 14001 lbs GVWR). Weber County also conducts a visual tampering inspection for model year 1998 through 2007 diesel vehicles.

In any of the three counties, the frequency of inspection depends on the age of the vehicle. Vehicles less than two years old, as of January 1 on any given year, are exempt from an emissions inspection. Vehicles that are two years old but less than six are inspected every other year, as per Utah Code 41-6a-1642(6). All vehicles six years old and older are inspected annually.

Davis County reported a total of 9,096 diesel inspections completed during 2017. In aggregate, 816 of these vehicles failed the particular inspection, which amounts to a 9% fail rate. Of the total inspections performed, 3,346 were OBD inspections (12.8% fail rate), 1,556 were snap-idle inspections (4.2% fail rate), and 4,194 were opacity inspections (7.6% fail rate).

Weber County inspected 10,727 diesel vehicles in 2017. OBD inspections resulted in a 19 % failure rate (1999 vehicles), and visual tampering inspections produced a 7.5% failure rate (801 vehicles).

Salt Lake County inspected a total of 42,002 diesel vehicles in 2017; 26,956 OBD inspections with a 4.8% fail rate (1,295 vehicles), and 14,735 snap acceleration inspections with a 2.8% fail rate (419 vehicles failed).

6.3 Conclusion: Air Quality as of the Attainment Date

This demonstration began with a modeled analysis that predicted PM_{2.5} concentrations in 2019, the attainment year, beneath the NAAQS at all stations but one, the Rose Park station. Even at Rose Park, the prediction was very close (35.9 µg/m³). Additional analysis was presented to supplement the modeled demonstration, including: an alternate conclusion that did show a concentration beneath the NAAQS in 2019, trends in ambient concentrations of PM_{2.5}, NO₂, and SO₂, trend in emissions of PM_{2.5} and its precursors, some examples of how the modeled analysis might be considered conservative in its assessment of emissions improvement, and perhaps most importantly, some examination of what might be the shortcomings of the model as presently configured.

To this final point, one might consider the following when deciding how much the model may be relied upon.

1 Despite a significant projected decrease in NO_x and VOC emissions between 2016 and
2 2019, the modeled PM_{2.5} results only show a slight decrease in predicted nitrate (NO₃).
3 The model simulates an ammonia-limited and oxidant-limited regime in the Salt Lake
4 Valley. However, observations from the recent 2017 UWFPS report suggest that the Salt
5 Lake Valley airshed is actually close to the equivalence point between NH₃ limited and
6 NO_x limited regimes during a wintertime inversion. This implies that if the model more
7 accurately represented the wintertime inversion episode, then one would certainly see a
8 bigger PM_{2.5} decrease relative to the sizable reduction in NO_x and VOC emissions
9 projected for 2019.

10 To improve modeled NO₃ (and hence, PM_{2.5}) performance, ammonia was artificially
11 injected into the emissions inventory. While this adjustment improved NO₃ performance,
12 it is associated with multiple uncertainties. As applied, the model assumes a uniform
13 temporal distribution and a coarse spatial variation in artificial ammonia emissions across
14 the Salt Lake Valley. Even with the additional ammonia, the model was still ammonia-
15 limited during the extent of the episode.

16 The model may also be too sensitive to oxidants levels. Carbonyls and ClNO₂, which are
17 sources of oxidants that promote PM_{2.5} and O₃ production, as shown by recent aircraft
18 measurements in the Salt Lake Valley, are underestimated in the model. Carbonyls,
19 particularly formaldehyde, are misrepresented in the model and the chemical pathway
20 responsible for ClNO₂ formation is not emulated at all.

21 These uncertainties in the model with regard to both the characterization of the regional
22 chemistry to the inventorying of certain constituents, ammonia in particular, may lead
23 one to give more weight to some of the empirical evidence. Past trends in emissions
24 reductions, particularly reductions in NO_x and SO₂, compare favorably with
25 commensurate trends in monitored PM_{2.5}. Against a more-or-less constant background of
26 direct PM_{2.5} emissions, these trends suggest that the area has experienced large
27 improvements in the magnitude of PM_{2.5} exceedances incurred during wintertime
28 episodes of cold pool meteorology. These episodes are dominated by secondary PM_{2.5}.
29 All indications are that PM_{2.5} precursor emissions, particularly NO_x and VOC, are
30 expected to decline markedly over the next 5 years. Based on past experience, there is no
31 reason to think that this would not continue to provide an improvement in ambient PM_{2.5}.
32 It is worth noting again that the model would in fact show attainment at all monitor
33 locations in 2019 if the data for August 20, 2015 is documented as being affected by an
34 exceptional event.

35 Finally, it should be noted that, based on historic monitoring trends and current
36 monitoring values, it is highly likely that the nonattainment area will attain the standard
37 and qualify for a clean data determination as soon as the 2018 monitored data can be
38 certified.

39 In summary, UDAQ is persuaded by these additional analyses and pieces of information,
40 and after considering the entire weight of evidence, conclude that it is in fact likely that
41 the Salt Lake City, UT PM_{2.5} nonattainment area will attain the 2006 24-hour PM_{2.5}
42 health standard by the attainment date in 2019.

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Chapter 7 – TRANSPORTATION CONFORMITY

7.1 Introduction

The federal Clean Air Act (CAA) requires that transportation plans and programs within the Salt Lake City, Utah PM_{2.5} nonattainment area conform to the air quality plans in the region prior to being approved by the Wasatch Front Regional Council (WFRC) Metropolitan Planning Organization. Demonstration of transportation conformity is a condition to receive federal funding for transportation activities that are consistent with air quality goals established in the Utah State Implementation Plan (SIP). Transportation conformity requirements are intended to ensure that transportation activities do not interfere with air quality progress. Conformity applies to on-road mobile source emissions from regional transportation plans (RTPs), transportation improvement programs (TIPs), and projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) in areas that do not meet or previously have not met the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, particulate matter less than 10 micrometers in diameter (PM₁₀), or particulate matter 2.5 micrometers in diameter or less (PM_{2.5}), or nitrogen dioxide.

The Fixing America's Surface Transportation Act or "FAST Act" and section 176(c)(2)(A) of the CAA require that all regionally significant highway and transit projects in air quality nonattainment areas be derived from a "conforming" transportation plan. Section 176(c) of the CAA requires that transportation plans, programs, and projects conform to applicable air quality plans before being approved by an MPO. Conformity to an implementation plan means that proposed activities must not (1) cause or contribute to any new violation of any standard in any area, (2) increase the frequency or severity of any existing violation of any standard in any area, or (3) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The plans and programs produced by the transportation planning process of the WFRC are required to conform to the on-road mobile source emissions budgets established in the SIP, or absent an approved or adequate budget, required to meet the interim conformity test. Approval of conformity is determined by the FHWA and FTA.

7.2 Consultation

The Interagency Consultation Team (ICT) is an air quality workgroup in Utah that makes technical and policy recommendations regarding transportation conformity issues related to the SIP development and transportation planning process. Section XII of the Utah SIP established the ICT workgroup and defines the roles and responsibilities of the participating agencies. Members of the ICT workgroup collaborated on a regular basis during the development of the PM_{2.5} SIP. They also meet on a regular basis regarding transportation conformity and air quality issues. The ICT workgroup is comprised of

management and technical staff members from the affected agencies associated directly with transportation conformity.

ICT Workgroup Agencies

- Utah Division of Air Quality (UDAQ)
- Metropolitan Planning Organizations MPOs
 - Cache MPO
 - Mountainland Association of Governments
 - Wasatch Front Regional Council
- Utah Department of Transportation (UDOT)
- Utah Local Public Transit Agencies
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- U.S. Environmental Protection Agency (EPA)

The regional emissions analysis is the primary component of transportation conformity and is administered by the lead transportation agency located in the EPA designated air quality nonattainment area. The responsible transportation planning organization for the Salt Lake City, UT nonattainment area is the Wasatch Front Regional Council (WFRC). During the SIP development process the WFRC coordinated with the ICT workgroup and developed PM_{2.5} SIP motor vehicle emissions inventories using the latest planning assumptions and tools for traffic analysis and the EPA-approved Motor Vehicle Emission Simulator (MOVES2014a) emissions model. The WFRC and the ICT worked cooperatively to develop local MOVES2014a modeling data inputs using EPA recommended methods where applicable.

7.3 Transportation Conformity PM_{2.5} Components

The transportation conformity requirements found in 40 CFR 93.102 requires that the PM_{2.5} SIP include motor vehicle emissions budgets for PM_{2.5} precursor emissions of ~~[Nitrogen]~~ Oxides of Nitrogen (NO_x) and Volatile Organic Compounds (VOC), and direct PM_{2.5} (primary exhaust PM_{2.5} + brake and tire wear) emissions. VOC emissions precursor budgets are required because UDAQ has identified VOCs as a PM_{2.5} precursor that significantly impact PM_{2.5} concentrations.

The EPA conformity rule presumes that PM_{2.5} re-entrained road dust does not need to be included in the interim conformity test unless either the State or EPA decides that re-entrained road dust emissions are a significant contributor to the PM_{2.5} nonattainment problem. The UDAQ conducted a re-entrained road dust study that concluded that PM_{2.5}

1 re-entrained road dust emissions are negligible in the Salt Lake City, Utah PM_{2.5}
2 nonattainment area, and thus meet the criteria of 40 CFR 93.102(b)(3). EPA Region 8
3 reviewed the study and concurred with the UDAQ's findings. The re-entrained road dust
4 insignificant finding is located in the On-Road Mobile Sources PM_{2.5} Episodic Inventory
5 TSD.

6 7.4 Interim PM_{2.5} Conformity Test

7 The EPA interim conformity test, for the purposes of this plan revision, will require that
8 PM_{2.5} precursor emissions of NO_x and VOC, and direct PM_{2.5} (primary exhaust PM_{2.5} +
9 brake and tire wear) emissions from RTPs, TIPs, and projects funded or approved by the
10 FHWA or the FTA not exceed 2008 levels.

11 The Interim conformity test requirements apply until EPA has declared the motor vehicle
12 emissions budgets adequate for transportation conformity purposes or until EPA approves
13 the budget in the Federal Register.
14

7.5 Transportation Conformity PM_{2.5} Budgets

[The Wasatch Front Regional Council requested motor vehicle emissions budgets (MVEBs) for the Salt Lake City, PM_{2.5} nonattainment area.] In this SIP, the State is establishing transportation conformity MVEBs for the Salt Lake City, PM_{2.5} nonattainment area. The MVEBs are established for tons per average winter weekday (tpww) for PM_{2.5} precursors NO_x and VOC, and for direct PM_{2.5} (primary exhaust PM_{2.5} + brake and tire wear). WFRC applied an increased growth rate of 5% to the Vehicle Miles of Travel. This growth rate adjustment was applied to allow for unanticipated fluctuations in future VMT. VMT growth rate assumptions may be found in the Technical Support Document (TSD) for On-Road Mobile Sources (at Chapt. 3.e, see: iii. MOVES Modeling Procedure: 3. MOVES2014 Local Model Inputs).

Table 7.1, Emissions Budgets for Transportation Conformity Purposes (EPA MOVES2014a).

	Direct PM _{2.5} (tpww)	NO _x (tpww)	VOC (tpww)
2017	2.68	59.92	32.67
2019	2.27	50.07	28.85
2020	2.11	45.84	26.88

Note: TPWW: Tons Per Average Winter Weekday. Direct PM_{2.5} is Primary Exhaust PM_{2.5} total + brake and tire wear. VOC emissions do not include refueling spillage and displacement vapor loss. Budgets are rounded to the nearest hundredth ton. Derivation of the MVEBs may be found in the Technical Support Document for On-Road Mobile Sources (at Chapt. 3.e, see: iv. Quantifiable Nonattainment Modeling Results and Motor Vehicle Emissions Budget Derivation).

It is important to note that the MVEBs presented in Table 7.1 are somewhat different from the Summary Emissions Inventory (EI) presented in **Table 4.1**. Overall the emissions established as MVEBs are calculated using MOVES to reflect an average winter weekday. The totals presented in the Summary EI, however, represent an average-episode-day. The episode used to make this average (December 31, 2010 through January 10) includes seven such winter weekdays, but also includes two weekends. Emissions produced on weekdays are significantly larger than those produced on both Saturdays and Sundays. Therefore, the weighted average of daily emissions calculated for an episode-day will be less than that of a weekday. There are also some conventions to be considered in the establishment of MVEBs. In particular:

- PM_{2.5} in the Summary EI totals includes direct exhaust, tire & brake wear, and fugitive dust. For the MVEBs PM_{2.5} includes direct exhaust, tire & brake but no fugitive dust.
- VOC emissions in the Summary EI totals include refueling spillage and displacement vapor loss. These emissions were included in the Summary EI as belonging to the On-Road Mobile Source. MVEBs for VOC do not include these emissions because, in this context, they are regarded as an Area Source.

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23

7.6 Trading Ratios

4 Per section 93.124 of the conformity regulations, for transportation conformity analyses
5 using these budgets in analysis years beyond 2020, a trading mechanism is established to
6 allow future increases in on-road direct PM_{2.5} emissions to be offset by future decreases
7 in plan precursor emissions from on-road mobile sources at appropriate ratios established
8 by the air quality model. Future increases in on-road direct PM_{2.5} emissions may be
9 offset with future decreases in NO_x emissions from on-road mobile sources at a NO_x to
10 PM_{2.5} ratio of 12.67 to 1 and/or future decreases in VOC emissions from on-road mobile
11 sources at a VOC to PM_{2.5} ratio of 31.96 to 1. This trading mechanism will only be used
12 if needed for conformity analyses for years after 2020. To ensure that the trading
13 mechanism does not impact the ability to meet the NO_x or VOC budgets, the NO_x
14 emission reductions available to supplement the direct PM_{2.5} budget shall only be those
15 remaining after the 2020 NO_x budget has been met, and the VOC emissions reductions
16 available to supplement the direct PM_{2.5} budget shall only be those remaining after the
17 2020 VOC budget has been met. Clear documentation of the calculations used in the
18 trading should be included in the conformity analysis. The assumptions used to create the
19 trading ratios may be found in the following document, "Trading Ratios for Conformity
20 Salt Lake Serious PM_{2.5}", included in Chapter 8 Misc. of the TSD.
21
22

Chapter 8 – QUANTITATIVE MILESTONES DEMONSTRATING REASONABLE FURTHER PROGRESS

8.1 Introduction

Clean Air Act Section 172(c)(2) requires that plans for nonattainment areas “shall require reasonable further progress (RFP).” This general requirement is interpreted for PM_{2.5} areas in EPAs’ Implementation Rule for Fine Particulate Matter (81 FR, 58010). The definition of RFP is given in 40 CFR 51.1000. It means “such annual incremental reductions in emissions of direct PM_{2.5} and PM_{2.5} plan precursors as are required for the purpose of ensuring attainment of the applicable PM_{2.5} NAAQS in a nonattainment area by the applicable attainment date.”

In general terms, the goal of these RFP requirements is for areas to achieve continual progress toward attainment, rather than perhaps deferring implementation of all measures until the attainment deadline.

The pollutants to be addressed in the RFP plan are those pollutants that are identified for purposes of control measures in the attainment plan: PM_{2.5}, SO₂, NO_x, VOC, and ammonia.

8.2 Serious Area Planning Requirements

The planning requirements RFP and Quantitative Milestones within PM_{2.5} nonattainment areas are given in 40 CFR 51 paragraphs 1012 and 1013. In summary:

The RFP plan must demonstrate annual incremental reductions in emissions (direct PM_{2.5} and precursors) to ensure attainment by the attainment date. It shall include:

- A schedule describing the implementation of control measures during each year of the plan.
- RFP projected emissions for each applicable milestone year, based on the anticipated implementation schedule for control measures.
- An analysis that demonstrates that by the end of each milestone year emission levels will reflect progress that is either generally linear or stepwise.
- Also, there must be a tracking mechanism for the progress that is expected.
- Finally, for purposes of establishing motor vehicle emissions budgets... (as required in 40 CFR part 93) for a PM_{2.5} nonattainment area, the state shall include in its RFP submission an inventory of on-road mobile source emissions in the nonattainment area for each milestone year.

For areas like the SLC, UT area that were designated nonattainment for the 2006 PM_{2.5} NAAQS prior to January 15, 2015, the first milestone is December 31, 2017. Additional milestones will occur every three years thereafter, up until and including the first such milestone after the attainment date. The attainment date for this plan is December 31, 2019. Therefore, the second and final milestone will come due at December 31, 2020.

8.3 RFP for the Salt Lake City, UT Nonattainment Area

The attainment demonstration for the SLC, UT PM_{2.5} nonattainment area shows that the 2006, 24-hr NAAQS can be achieved by the attainment date of December 31, 2019. Essentially, this may also be considered to demonstrate that the area is achieving RFP. The emissions reductions associated with the application of BACM and BACT were factored into an inventory for 2019 that was assessed using air quality modeling as well as other information and analyses. The entire analysis demonstrates that these reductions in emissions are likely sufficient to demonstrate attainment of the applicable standard by the applicable attainment date. The starting point for evaluating RFP should be the baseline year used in the modeling analysis. This is a year (2016) selected to coincide with the period used to establish the monitored design value for the modeling analysis; a period in which the area was violating the applicable NAAQS. Thus, the magnitude of emissions reductions should be evaluated over a period spanning from 2016 through 2019. Quantitatively, the following assessment of emissions and incremental emissions reductions in **Table 8.1** will show that RFP is met using the criteria discussed above:

Reasonable Further Progress					
Salt Lake City, UT PM2.5 Nonattainment Area					
*Emissions by Year	Base Yr.	Projection Years with Growth & Controls			
	2016	2017	2019	2020	**RFP
PM2.5	15.4	15.8	16.1	16.0	0.2
NOx	103.6	100.2	94.9	87.9	-2.9
SO2	5.6	5.6	4.9	4.9	-0.2
VOC	91.7	91.5	86.8	83.5	-1.6
NH3	16.0	16.0	16.0	15.9	0.0
PM2.5 Precursors	216.9	213.2	202.6	192.2	-4.8
Total	232.3	229.0	218.7	208.2	-4.5
*Emissions are reported in tons per average-episode-day					
**Emission change per year, (ton/day) averaged from Base Year (2016) through Attainment Year (2019)					

Table 8.1, Reasonable Further Progress in the SLC, UT Nonattainment Area

Emissions in **Table 8.1** have been aggregated to include all four source categories. RFP projected emissions, however, are defined to look at each source category individually.

That information appears already in **Table 4.1**, but is included here also as **Table 8.2** for the ease of discussion.

Emissions in both tables show not just the effect of BACM and BACT, but also growth in population and vehicle miles traveled. Even with the inclusion of growth, the trends are still downward.

Emissions [tons/day]	Sector	PM _{2.5}	NO _x	VOC	NH ₃	SO ₂
2016 Base Year	Area Sources	6.13	13.63	45.96	14.22	0.17
	Mobile Sources	4.98	55.38	31.84	1.29	0.41
	NonRoad Sources	1.01	16.41	8.70	0.02	0.32
	Point Sources	3.26	18.18	5.25	0.44	4.70
	Total	15.38	103.61	91.74	15.97	5.60
2017 Milestone Year	Area Sources	6.19	13.57	46.02	14.21	0.22
	Mobile Sources	5.02	52.53	30.87	1.30	0.43
	NonRoad Sources	0.96	15.77	8.47	0.02	0.33
	Point Sources	3.58	18.32	6.13	0.44	4.61
	Total	15.75	100.18	91.48	15.97	5.59
2019 Attainment Year	Area Sources	6.23	11.84	44.34	14.21	0.22
	Mobile Sources	4.78	44.02	27.26	1.25	0.43
	NonRoad Sources	0.88	15.18	9.01	0.02	0.35
	Point Sources	4.25	23.86	6.21	0.48	3.90
	Total	16.13	94.90	86.82	15.96	4.89
2020 Milestone Year	Area Sources	6.24	9.54	43.73	14.20	0.20
	Mobile Sources	4.68	40.38	25.42	1.23	0.42
	NonRoad Sources	0.82	14.08	8.10	0.02	0.36
	Point Sources	4.26	23.86	6.22	0.49	3.90
	Total	16.00	87.86	83.47	15.94	4.88

* Salt Lake nonattainment area only

Table 8.2, RFP Projected Emissions in the SLC, UT Nonattainment Area

From **Table 8.2** it can be seen that the overall decrease in total NO_x and VOC emissions is, as expected, dominated by improvements in the On-Road Mobile Source category.

Yet, there are significant improvements in the Area Source category as well. Point Sources are responsible for the increase in PM_{2.5} emissions, but also account for the decline in SO₂. Ammonia emissions are essentially flat, but most of the reported ammonia is not attributed to any of the source categories. Rather, it has been artificially introduced into the analysis to improve model performance.

Table 8.2 also shows the emissions from on-road mobile sources in the milestone years. As noted in **section 7.5**, these totals differ somewhat from the MVEBs.

Control Measures: The inventory for 2019 “with growth and controls” reflects the implementation of all the best available control measures and best available control technologies identified in this plan, as well as all pre-existing control measures. As such, this inventory takes into account all controls that “may reasonably be required by the Administrator.”

For a complete discussion of BACM and BACT, and the control measures factored into the modeled demonstration for 2019, see Chapter 5 of the Plan.

For purposes of Milestone tracking, it is worth distinguishing those controls relied upon by this SIP that have been required by the State of Utah. Since these control measures have been required specifically for the purpose of this SIP it will be incumbent on the

State to make sure they are implemented, and then to verify as much in any subsequent milestone reporting requirement. These controls differ from controls that are already on the books or controls that are implemented at the federal level. Specifically, such State-specific controls reside in the categories of area and stationary point sources. A listing of these State-specific control measures appears, for area and stationary point source categories, in Tables 8.3 and 8.4 respectively.

<u>EPA-Approved/Conditionally Approved Control Measures for UT Moderate PM_{2.5} SIPs</u>	<u>Implementation Schedule</u>	<u>Estimated Reductions in the SLC NAA*</u>
<u>R307-302 Solid Fuel Burning Devices¹</u> <u>EPA conditionally approved October 19, 2016 (81 FR 71988).</u>	<u>February 1, 2017</u>	<u>See Table 5-1 residential wood burning ban</u>
<u>R307-303 Commercial Cooking¹</u> <u>EPA approved February 25, 2016 (81 FR 9343).</u>	<u>December 15, 2015</u>	<u>See Table 5-1 commercial cooking</u>
<u>R307-304 Solvent Cleaning¹</u>	<u>December 6, 2017</u>	<u>See Table 5-1 a subset of degreasing</u>
<u>R307-309 Nonattainment and Maintenance Areas for PM₁₀ and PM_{2.5}: Fugitive Emissions and Fugitive Dust¹</u> <u>EPA approved February 25, 2016 (81 FR 9343).</u>	<u>Salt Lake County, Utah County, and the City of Ogden – January 1, 2013.</u> <u>Remaining NAAs – April 1, 2013.</u> <u>Amended August 4, 2017</u>	<u>See Table 5-1 fugitive dust</u>
<u>R307-312 Aggregate Processing Operations for PM_{2.5} Nonattainment Areas.</u> <u>EPA approved October 19, 2016 (81 FR 71988).</u>	<u>February 4, 2016</u>	<u>See Table 5-1 aggregate operations</u>
<u>R307-335 Degreasing and Solvent Cleaning Operations¹</u> <u>EPA approved February 25, 2016 (81 FR 9343).</u>	<u>All sources within Salt Lake and Davis Counties R307-335-3 through R307-335-6 – January 1, 2013.</u> <u>All other sources defined in R307-335-2 – September 1, 2013.</u> <u>All sources within Box Elder, Cache, Utah, Weber, and Tooele Counties R307-335-7 – August 1, 2014</u> <u>Amended October 29, 2017 by removing sections 6 & 7 to for rule R307-304</u>	<u>See Table 5-1 a subset of degreasing</u>
<u>R307-342 Adhesives & Sealants¹</u> <u>EPA approved February 25, 2016 (81 FR 9343).</u>	<u>December 1, 2014</u>	<u>See Table 5-1 adhesive/sealants</u>
<u>R307-343 Emissions Standards for Wood Furniture Manufacturing Operations¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties – September 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah, and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1 wood furniture manufacturing</u>

<u>EPA-Approved/Conditionally Approved Control Measures for UT Moderate PM_{2.5} SIPs</u>	<u>Implementation Schedule</u>	<u>Estimated Reductions in the SLC NAA*</u>
<u>R307-344 Paper, Film & Foil Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>paper/film/foil</u>
<u>R307-345 Fabric & Vinyl Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>fabric/vinyl</u>
<u>R307-346 Metal Furniture Surface Coatings²</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>metal furniture</u>
<u>R307-347 Large Appliance Surface Coatings²</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>appliance</u>
<u>R307-348 Magnet Wire Coatings²</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>magnet wire</u>
<u>R307-349 Flat Wood Panel Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>flat wood</u>
<u>R307-350 Miscellaneous Metal Parts and</u> <u>Products Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties –</u> <u>September 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah,</u> <u>and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1</u> <u>misc. metal</u>

<u>EPA-Approved/Conditionally Approved Control Measures for UT Moderate PM_{2.5} SIPs</u>	<u>Implementation Schedule</u>	<u>Estimated Reductions in the SLC NAA*</u>
<u>R307-351 Graphic Arts¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>Sources in Salt Lake and Davis Counties – February 1, 2013.</u> <u>Sources in Box Elder, Cache, Tooele, Utah, and Weber Counties – January 1, 2014.</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1 graphic art</u>
<u>R307-352 Metal Containers, Closure, and Coil Coatings²</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>January 1, 2014</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1 coil/containers</u>
<u>R307-353 Plastic Parts Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>January 1, 2014</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1 plastic</u>
<u>R307-354 Automotive Refinishing Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>January 1, 2014</u> <u>Amended December 6, 2017</u>	<u>See Table 5-1 autobody</u>
<u>R307-355 Control of Emissions from Aerospace Manufacture and Rework Facilities¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>January 1, 2014</u> <u>Amended March 8, 2018</u>	<u>See Table 5-1 aerospace</u>
<u>R307-356 Appliance Pilot Light¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>January 1, 2013</u>	<u>See Table 5-1 pilot light</u>
<u>R307-357 Consumer Products¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>May 8, 2014</u>	<u>See Table 5-1 consumer products</u>
<u>R307-361 Architectural Coatings¹</u> <u>EPA approved February 25, 2016 (81 FR 9343)</u>	<u>October 31, 2013</u>	<u>See Table 5-1 paint</u>

Table 8.3, RFP / Quantitative Milestone Tracking Table for Area Sources. *uncontrolled to controlled 2019 emissions. ¹ Potential 2020 quantitative milestone reporting metrics: control measure implementation schedule and confirmation that measures have been implemented. ² Potential 2020 quantitative milestone reporting metrics: control measure implementation schedule and review if any new sources located in the NAA.

Company	RACT Equipment Update(s)	BACT Requirement(s)	Implementation Schedule	Quantify Reduction (tons/yr)	Compliance Mechanism
ATK Launch Systems Inc.	Two (2) 25 MMBTU/hr Natural Gas Boilers	Ultra Low Nox Burners	31-Dec-24	NOx ~ 10.44 tons/yr	AO Issuance
Big West Oil Company	Hydrocarbon Flares	Limited routine flaring between Oct 1st and March 31st	Date of SIP Approval	N/A	AO Issuance
	Carbon Canisters/Fire Pumps	Miscellaneous Carbon Canister and Fire Pump Changes	31-Dec-19	VOC ~ 15.4 tons/yr	AO Issuance
Chemical Lime Company	Lime Kiln	Selective Non-catalytic Reduction New Baghouse	Upon Source Start-up Upon Source Start-up	N/A N/A	AO Issuance AO Issuance
Chevron Products Co.	Boilers/Compressor Drivers	Replacement of 4 Compressor Drivers	31-Dec-19	N/A	AO Issuance
	Tier 3 Fuels	Removal of Boilers 1, 2, & 4; Replacement with Boiler 7	31-Dec-19	N/A	AO Issuance
Compass Minerals	Boilers #1 & #2 - Required Nox Limitations PM2.5 Filterable and Condensable emission limits required for 14 emission points	Ultra low Nox burners/Upgrades to Baghouses	31-Dec-19	NOx ~ 10 tons/yr	AO Issuance
Hexel Corporation	Carbon Fiber Lines	Addition of Filter Boxes on Lines 13 & 14 De-NOx Water Direct Fired Thermal Oxidizer on Lines 13, 14, 15 & 16 Low-Nox Burners w/fuel gas re-circulation on Lines 3, 4, & 7	31-Dec-19 31-Dec-24 31-Dec-24	PM 2.5 ~ 20 tons/yr NOx ~ 75 tons/yr NOx ~ 25.6 tons/yr	AO Issuance AO Issuance AO Issuance
Hill Air Force Base	Painting and De-painting	VOC emission limitation for painting activities.	31-Dec-24	PM2.5 ~ 11.8 tons/yr	AO Issuance
	Boilers	Requirement that no boilers manufactured after January 1, 1989 over 30 MMBtu/hr be operated.		NOx ~ 434.38 tons/yr VOC ~ 8.53 tons/yr	
Holly Corporation	Wet Gas Scrubber & Boiler	Installation of Wet Gas Scrubber and Boiler Replacement	N/A	N/A	N/A
Kennecott Utah Copper					
Mine	Mine	Mileage limitation and Required lower emission rate for in-pit crusher	Date of SIP Approval	PM2.5 ~ 4.33 tons/yr	AO Issuance
Power Plant	Power Plant upgrades	Unit #4: Installation of SCR and Overfired Air; Unit #4: Lower ppm and lb/hr testing requirement.	1-Jan-19	NOx ~ 1,268.8 tons/yr (8760 hrs of operation) NOx ~ 302.43 tons/yr (2088 hrs of operation)	AO Issuance AO Issuance
Smelter & Refinery	Smelter & Refinery upgrades	Replacement of one (1) 82 MMBtu/hr Tankhouse Boiler	1-Dec-20	NOx ~ 35.04 tons/yr (8760 hrs of operation)	AO Issuance
Nucor Steel Mills	No Changes	No BACT Changes	N/A	N/A	N/A
Pacificorp Energy Gadsby Power Plant	No Changes	No BACT Changes	N/A	N/A	N/A
Proctor & Gamble	Utility Boilers	PM2.5 Filterable and Condensable Limits & Nox Limits Workload changes at facility	N/A	N/A	AO Issuance
Tesoro Refining	Refinery Operations	Installation of Wet Gas Scrubber	31-Oct-19	N/A	AO DAQE-103350075-18
University of Utah	Heating Plant	Replacement of Boiler #4. Installation of Boiler #9. Natural Gas limitations on Boilers #1, #3, & #4.	31-Dec-19 30-Sep-19	NOx ~ 44.29 tons/yr NOx ~ 4.27 tons/yr	AO Issuance AO Issuance
Utah Municipal Power Agency	Power Plant	No BACT required changes	N/A	N/A	N/A
Vulcraft	Steel Fabrication	No BACT required changes	N/A	N/A	N/A

Table 8.4, RFP / Quantitative Milestone Tracking Table for Point Sources

Schedule for the Implementation of BACM and BACT: RFP must be considered in light of the attainment date as well as the date by which all BACT and BACM must be implemented. Consideration is also given to the attainment demonstration which must make its assessment as of the attainment date. For the SLC-UT nonattainment area the attainment date is December 31, 2019. 40 CFR 51.1011 establishes that control measures must be implemented no later than the beginning of the year containing the applicable attainment date. Thus, for purposes of RFP and SIP credit, the deadline for implementation of all BACT and BACM is January 1, 2019. Any control measures implemented beyond such date are instead regarded as additional feasible measures. Implementation dates for the State-specific control measures have been included in Tables 8.3 and 8.4.

The improving trends in emissions are evident from **Table 8.1**, but it is important to look more closely and determine whether the downward trends are either generally linear in character or whether they reveal a more stepwise shape. **Figure 8.1** is included to make this assessment.

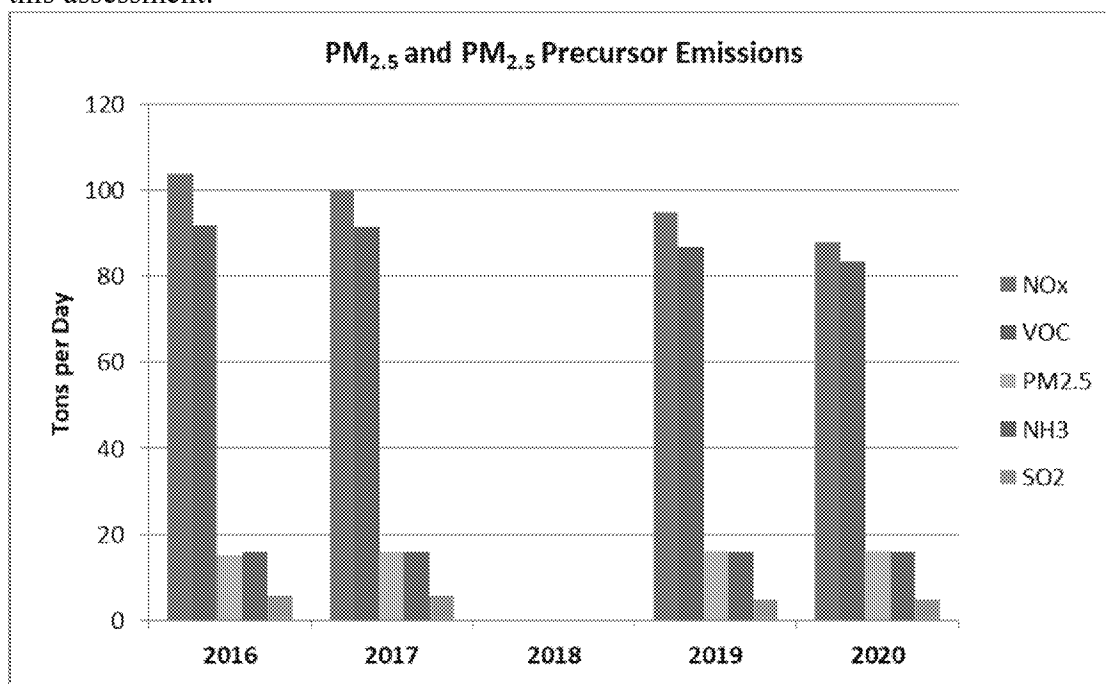


Figure 8.1 Emissions totals for PM_{2.5} and PM_{2.5} precursors in the Base Year (2016), Attainment Year (2019), and Milestone Years (2017 and 2020)

From the figure, it may be seen that the trends in SO₂ and VOC show a stepwise decline between 2017 and 2019. This is supported by the implementation date (Dec. 31, 2018) for BACM & BACT. In particular, Area Source BACM rules were projected to become fully effective by 2019, and most of these rules targeted VOC emissions. The decline in SO₂ emissions is explained by the installation of a wet-gas scrubber at [one of the refineries] Tesoro Refining & Marketing Co. LLC in 2018.

1 The trend in NO_x is more linear, remaining steadily downward with the continued
2 implementation of Tier 2 of the federal motor vehicle control program. The introduction
3 of Tier 3 in 2017 is likely accelerating the downward trend from 2019 to 2020.
4 The trend of primary PM_{2.5} emissions is seen to be relatively flat. This is consistent with
5 the trend seen since all the way back to about 2000 (see **Figure 6.21**).
6 It is also interesting to note in light of the improvement shown in the ambient monitoring
7 data for PM_{2.5} (**Figures 6.15 and 6.16**). As noted in the Weight of Evidence discussion
8 (**section 6.2**), the actual improvement in monitored PM_{2.5} concentrations, both peak and
9 annual values, is likely due to reductions in PM_{2.5} precursor emissions; effectively
10 shaving the peaks off of the wintertime exceedances composed mainly of secondary
11 nitrate.

12 8.4 Milestones for the SLC, UT Nonattainment Area

13 The PM Implementation Rule requires quantitative milestones, which demonstrate
14 reasonable further progress, to be achieved every three years.
15 Not later than 90 days after the milestone comes due, Utah must submit a milestone
16 report that certifies that the SIP control strategy is being implemented. The report must
17 also include a discussion of whether the area will attain the NAAQS by the applicable
18 date.
19 In order that it may make such certification, Utah will need to track the implementation
20 of BACM and BACT. This will be accomplished for the point sources by the issuance of
21 Approval Orders authorizing construction of any required modifications as well as on-site
22 inspections to verify that any operating practices have been implemented. Utah will also
23 work with the EPA to ensure that any rulemaking actions taken to implement BACM at
24 the many area sources in the nonattainment area have been approved into the Utah SIP.
25 If it fails to submit the quantitative milestone demonstration, or if EPA determines that
26 the milestone was not met, The State is required to submit a SIP revision ensuring that
27 the next milestone will be met or alternately that the NAAQS will be attained.
28 UDAQ herein commits to prepare and submit a milestone report no later than 90 days
29 from the attainment date.
30

Chapter 9 – CONTINGENCY MEASURES

9.1 Background

The Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule details under the contingency measure requirements (40 CFR 51.1014) that the state must include contingency measures that shall take effect with minimal further action by the State or the EPA following a determination by the EPA Administrator that the area has failed to:

- 1) meet the RFP requirements set forth in this SIP,
- 2) meet any quantitative milestone detailed in this SIP,
- 3) submit a quantitative milestone report for this SIP; or
- 4) attain the standard by the attainment date set forth in this SIP.

The PM Implementation Rule states that the contingency measure(s) shall include control measures that are not already included in the SIP. Each contingency measure shall specify the timeframe that the requirements will become effective following determination by the EPA Administrator that the area has failed to meet one of the requirements listed above in 1-4. The SIP must also contain a description of the specific trigger mechanisms for the contingency measure(s).

The rule does not include any specific level of emission reductions that must be adopted to meet the contingency measures requirement under section 172(c)(9).

9.2 Contingency Measures and Implementation Schedules for the Nonattainment Area

Nothing precludes a State from implementing a contingency measures before it is actually triggered, but the credit for a contingency measure may not be used in either the attainment or reasonable further progress demonstrations.

The following measure is already fully functioning, and it is not currently being used as a control strategy in this SIP:

Heavy-duty diesel engine emissions reduction programs: Through the EPA's Clean Diesel Program funded by the Diesel Emissions Reduction Act (DERA), Utah currently has an estimated \$5 million in grants to reduce diesel emissions by replacing or retrofitting old diesel engines that have outdated emissions standards with new, cleaner vehicles or emissions reduction retrofit equipment.

For calendar years 2015-2017, the average annual emissions reductions from Clean Diesel projects within the nonattainment area are as follows:

	NO_x	PM_{2.5}	VOC
2015	49 tons	3.4 tons	4.2 tons

2016	49 tons	3.4 tons	4.2 tons
2017	49 tons	3.4 tons	4.2 tons

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Funding amounts have increased in recent years and the projected average annual emissions reduction based on funding sources already in place for the NAA for calendar years 2018-2020 are:

	NO_x	PM_{2.5}	VOC
2018	182 tons	14 tons	20 tons
2019	182 tons	14 tons	20 tons

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The grant funding amounts are expected to stay similar or increase, resulting in the following minimum annual emissions reductions in the future:

	NO_x	PM_{2.5}	VOC
2020	182 tons	14 tons	20 tons
2021	182 tons	14 tons	20 tons
2022	182 tons	14 tons	20 tons
2023	182 tons	14 tons	20 tons

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Since Clean Diesel projects are continuously being carried out in the State, it is not necessary for a trigger mechanism or implementation schedule. Therefore, this contingency measure will already be fully functioning and implemented in the case that it becomes necessary for credit.

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ATTACHMENT B

Part A Comments and Responses

Compass Minerals

Comment Summary A-1: Compass Minerals provided discussion regarding the BACT analysis for NO_x control for the 108.11 MMBtu/hr Boilers #1 and #2. This discussion was in regards to a 20-year equipment life which was used in the BACT analysis versus a 10-year equipment life for process heater burners.

UDAQ Response to A-1: This Comment has been discussed with Compass Minerals and determined to be a more appropriate comment for the Part H Section which was out for comment November 1, 2018 thru November 30, 2018. The DAQ will address this comment in the Part H Comment Response for the above stated comment period.

Comment Summary A-2: Compass Minerals concurred with the Salt Lake Area BACT analysis for fugitive dust (i.e., R307-309) stating, “UDAQ’s BACM clearly meets federal requirements as there are no other potential requirements that would lead to meaningful further emission reductions.” Compass minerals proceeded to provide supporting rationale based on EPA guidance, 57 Federal Register 13498, 13544 April 16, 1992 and US EPA Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (September 1992).

UDAQ Response to A-2: UDAQ agrees with the commenter regarding the fugitive dust rule R307-309.

Environmental Protection Agency, Region 8

Comment Summary A-3: [C-1: EPA Region 8 Comments Regarding the Utah Petroleum Associations’ Comments [submitted by EPA Region 8, **Enclosure 1**] **UDAQ Response to A-3 presented throughout: Additional discussion surrounding responses to the comments below may be found in the Response to Comment A-16 and in the “Draft UDAQ Major Stationary Source Precursor Demonstration for the Salt Lake City 24-hour PM_{2.5} Serious non-attainment Area” attached to these comments.**

Comment 1: Source impacts from nitrogen oxide (NO_x) precursor emissions should be evaluated using CAMx Particulate Source Apportionment Technology (PSAT), due to the potential for non-linear model response to changes in NO_x precursor emissions. In NO_x saturated photochemical regimes, model simulations of reductions in NO_x emissions from individual sources can predict increases in ammonium nitrate, even though the cumulative effect of NO_x reductions from all sources combined would show reductions in ammonium nitrate. We note that the Utah Petroleum Association (UPA)/Ramboll sensitivity simulations show negative mass contributions of NO_x to PM_{2.5} which is an indicator of the effect of the non-linear response. The CAMx PSAT addresses this concern by tracking the mass contributions from individual sources instead of the sensitivity to an individual source. Other precursors can also be tracked using

1 PSAT, but in this particular case, NO_x as a precursor to PM_{2.5} is most likely to be
2 sensitive to the particular modeling technique.

3
4 **Response to Comment 1:** In a region that is rich in NO_x, a process called ozone (O₃)
5 scavenging can occur where particulate nitrate (PNO₃) formation is suppressed. If NO_x
6 was reduced in such a NO_x-saturated region, more PNO₃ could result. This NO_x
7 “disbenefit” mechanism is emulated in the CAMx model. Therefore, a sensitivity based
8 analysis of NO_x contribution to PM_{2.5} could give counterintuitive results where reducing
9 NO_x actually produces more PNO₃. The source apportionment approach, PSAT,
10 quantifies how much PNO₃ is ultimately the result of specific sources. However, PSAT
11 can’t address how PNO₃ responds to changes in source-specific NO_x emissions. UDAQ
12 did conduct a PSAT model run looking at PNO₃, sulfate, and ammonium attribution from
13 Salt Lake nonattainment area point sources.

14
15 **Comment 2:** The modeled PM_{2.5} impacts are best evaluated and documented for
16 individual PM_{2.5} species and for the sum of all PM_{2.5} species for which the state
17 believes an insignificance demonstration should be provided.

18
19 **Response to Comment 2:** The commenter is suggesting that, rather than only examining
20 the effects on total PM_{2.5} alone from a precursor reduction, it is also important to
21 evaluate the effects on specific PM_{2.5} species, such as PNO₃, sulfate (PSO₄),
22 ammonium (PNH₄), and secondary organic aerosol (SOA). To account for any model
23 bias, UDAQ evaluated the modeled PM_{2.5} impacts for total PM_{2.5} as well as individual
24 secondary inorganic PM_{2.5} species (particulate nitrate, sulfate and ammonium), which
25 account for over 50% of PM_{2.5} mass.

26
27 **Comment 3:** It appears that in the UPA/Ramboll analysis, precursor contributions to
28 PM_{2.5} were evaluated using absolute model results, not the bias corrected (relative)
29 model results. For a SIP model attainment demonstration, model relative response factors
30 are typically used to correct for model bias. If UDAQ wants to examine absolute modeled
31 precursor impacts, then it is critical to evaluate model bias for individual components of
32 PM_{2.5}. Modeled underpredictions in PM components may lead to an underestimate of
33 absolute modeled precursor impacts. Both absolute and relative model response are
34 important to examine when evaluating the significance thresholds.

35
36 **Response to Comment 3:** In the UPA/Ramboll analysis, PM_{2.5} precursor contributions
37 were quantified using only the difference between two model runs for a given precursor.
38 The analysis used model results with no regard to outside information (e.g., ambient
39 monitor data) to inform analysis conclusions. The commenter is suggesting that other
40 non-model information could be used to scale modeled PM_{2.5} species output in order to
41 reduce model bias. If the model is biased low for nitrate for example, then the change in
42 PM_{2.5} following a reduction in NO_x emissions could be smaller than it actually is in
43 reality. In this instance, using observations of nitrate PM_{2.5} fraction could help
44 compensate. It’s worth mentioning that, to reduce model bias, UDAQ’s Salt Lake SIP
45 modeling used ambient monitor data to scale modeled PM_{2.5} species prior to predicting
46 future design values. EPA’s SMAT-CE software could potentially be used to accomplish

1 a similar bias adjustment for a modeled precursor demonstration. Also, to account for any
2 model bias, in its precursor demonstration analysis, UDAQ scaled absolute modeled
3 precursor impacts by measured PM_{2.5} data from January 1-10 2011, which represents a
4 typical inversion episode. While this analysis is associated with uncertainty, it provides a
5 reasonable estimate of model response to a change in precursor emissions.

6
7 **Comment 4:** The UPA comment letter relies on a recommended threshold found in the
8 EPA's draft guidance for precursor demonstrations. The draft guidance also states that it
9 does not "assure that the EPA will approve a precursor demonstration in all instances
10 where the guidance is followed, as the guidance may not apply to a particular situation
11 based upon the circumstances of a particular nonattainment area." The UDAQ should
12 consider whether the draft guidance thresholds should be used in the circumstances of the
13 Salt Lake City nonattainment area (NAA), particularly in light of the results of UDAQ's
14 attainment demonstration.

15
16 **Response to Comment 4:** UDAQ notes that EPA's (November 17, 2016) draft guidance
17 includes a recommendation to use 1.3 ug/m³ when evaluating for the 24-hour PM_{2.5}
18 NAAQS, whereas the UPA precursor demonstration used a less conservative significance
19 threshold of 1.5 ug/m³ which stems from a more recent update to the "Technical Basis
20 Document" that underlies the draft guidance. The commenter is correct in pointing out
21 that the PM_{2.5} SIP Requirements Rule establishes that the "significance" of a precursor's
22 contribution is to be determined based on the "facts and circumstances of the area."

23
24 UDAQ has indicated it will conduct its own analysis before determining whether it will
25 elect to include a major stationary source precursor demonstration as part of the Serious
26 Area Plan for the SLC nonattainment area. In doing so, UDAQ will give consideration to
27 the range of values presently in the literature, as well as their appropriateness to the
28 unique circumstances of this specific nonattainment area.

29
30 UDAQ also notes that the SIP Requirements Rule establishes that *if* such major stationary
31 source precursor demonstration concludes that: the contribution of the precursor to PM_{2.5}
32 levels (in a concentration-based contribution analysis), or a decrease in emissions of the
33 precursor (in a sensitivity-based contribution analysis) is in fact not significant, then EPA
34 *may* approve the demonstration. UDAQ will also give consideration to the likelihood of
35 any subsequent EPA approval of a stationary source precursor demonstration. **See also**
36 **Response to Comment A-16.**

37
38 **Comment Summary A-4 [submitted by EPA Region 8, Enclosure 2]: SIP**

39 **Narrative:** On page 83, UDAQ states, "The decline in SO₂ emissions is explained by
40 the installation of a wet-gas scrubber at one of the refineries in 2018." Please provide the
41 name of the refinery where the wet-gas scrubber was installed.

42
43 **UDAQ Response to A-4:** The refinery that installed the wet-gas scrubber is Tesoro
44 Refining & Marketing Co. LLC. A glance at SIP Table 4.2 indicates that SO₂ emissions
45 at Tesoro were listed at 544.38 tons/yr. in 2016 and 2017, but decreased to 91.20 tons/yr.
46 in 2019 and 2020. UDAQ will change the language on pp. 83 to read as follows: "The

decline in SO₂ emissions is largely explained by the installation of a wet-gas scrubber at Tesoro Refining & Marketing Co. LLC [one of the refineries] in 2018.”

Comment Summary A-5 [submitted by EPA Region 8, Enclosure 2]: SIP

Narrative: Please provide an explanation for the discrepancy between Table 4.1, page 27 and Table 5.1, page 34 in the SIP Narrative. In Table 5.1, the tons per day (tpd) reductions do not correlate with tpd in Table 4.1 for area sources.

UDAQ Response to A-5: Table 4.1 on pp. 27 shows (in *tons* / day) what was modeled in order to make assessments about 2017, 2019, and 2020. Each modeled assessment is made relative to the actual base year emissions of 2016.

For each of these years, emissions are reported for each of the four source categories... one of which is the Area Source category. In addition to growth, each of the inventories will reflect any emission controls that are either "on-the-books" or "on-the way".

Such is the case with the area source rules. All, if not most, of these rules were made part of the Moderate Area SIP (as RACT). They would therefore have been at least partially effective in the base year of 2016. Since the area is now classified as Serious, the area source rules were re-evaluated to address BACT, and in some cases the rules were made more restrictive.

Table 5.1 on pp. 34 (in *pounds* / day) is intended to illustrate the effectiveness belonging to each of the area source rules... for each pollutant, and for each year in the analysis. The relationship between these two tables is essentially this: The analysis begins with an inventory of uncontrolled emissions, which includes growth. Before these numbers are modeled, any emissions that will be removed from the airshed, due to emission controls, are subtracted from the inventory. In this case, these controls would be the area source rules. Those emissions that are effectively removed from the area source category are shown in Table 5.1. The remainder of the emissions will be released to the airshed, and are therefore modeled in CAMx. It is this remainder that appears in Table 4.1 as belonging to the Area Sources.

Comment Summary A-6 [submitted by EPA Region 8, Enclosure 2]: Reasonable Further Progress (RFP) and Quantitative Milestones:

Under the PM_{2.5} SIP Requirements Rule, the attainment plan must include a Reasonable Further Progress (RFP) plan “that demonstrates that sources in the area will achieve such annual incremental reductions in emissions of direct PM_{2.5} and PM_{2.5} plan precursors as are necessary to ensure attainment of the applicable PM_{2.5} NAAQS as expeditiously as practicable.” The RFP plan must include a “schedule describing the implementation of control measures during each year of the applicable attainment plan.”

Chapter 5 of the SIP Narrative provides emissions reductions for each of the area source rules.

1 However, neither Chapter 8 of the SIP Narrative nor the TSD describes the schedule for
2 implementation of the area source rules, along with implementation of BACT for major
3 stationary sources, as required and outlined above. We recommend adding a table in
4 Chapter 8 to satisfy this part of the RFP plan requirement.

5
6 CAA section 189(c) ties the RFP requirements in section 172(c) to quantitative
7 milestones. Under the SIP Requirements Rule, the plan must contain quantitative
8 milestones "that provide for objective evaluation of reasonable further progress toward
9 timely attainment of the applicable PM_{2.5} NAAQS in the area. At a minimum, each
10 quantitative milestone plan must include a milestone for tracking progress achieved in
11 implementing the SIP control measures, including BACM and BACT, by each milestone
12 date." See 40 CFR 51.1013(a)(2)(iii). We recommend using the table discussed above for
13 RFP, pertaining to 40 CFR 51.1012(a)(1), to help provide a reporting metric to be used to
14 satisfy the minimum quantitative milestone requirement.

15
16 **UDAQ Response to A-6:** UDAQ agrees with the commenter, and will augment Chapter
17 8 of the SIP Narrative with the recommended table(s) indicating the implementation dates
18 and tracking metrics associated with each of the control measures.

19
20
21 **Comment Summary A-7:** The state should estimate the emission reductions that would
22 be achieved by the EPA's heavy-duty diesel engine emissions reduction grant program
23 and assess whether those reductions would approximately equal the reductions necessary
24 to demonstrate RFP for one year.

25
26 **UDAQ Response to A-7:** The emissions reductions from DERA contingency measures
27 are summarized in tables in Chapter 9 of the SIP. RFP is tabulated in Chapter 8. The
28 control strategy analysis summarized in Chapter 5 shows that stationary point sources
29 meet BACT and area sources meet BACM. On-road mobile sources still contribute the
30 majority of emissions, including primary PM_{2.5} and all of the precursors except SO₂.
31 Further emission control in this category extends beyond the authorities of UDAQ. While
32 DERA grants provide a non-regulatory opportunity to reduce emissions, there is currently
33 not enough funding to demonstrate a full year's worth of emissions reductions in the Salt
34 Lake NAA with the proposed contingency measures. Control measures developed to
35 meet increasingly stringent ozone and PM_{2.5} standards in Utah's urbanized areas have
36 likewise become increasingly stringent, and still it is a challenge to attain the 2006,
37 PM_{2.5} NAAQS. This leaves little room for additional reductions that can be set aside as
38 contingency measures.

39
40 The preamble to EPA's PM_{2.5} Implementation Rule says that "contingency measures
41 should provide for emission reductions equivalent to one years share of reductions
42 needed to demonstrate attainment...". However, 40 CFR 50.1014 does not specify any
43 amount of reductions necessary for a contingency measure.

44
45 **Comment Summary A-8:** EPA stated that the UDAQ BACM summary presents reviews
46 of rules in Maine and Washington state, and concludes that R307-208 is more stringent

1 than these rules. It is not clear how this conclusion was reached. Please provide additional
2 information and discussion to support this conclusion.

3
4 EPA requested that UDAQ substantiate the estimated number of outdoor boilers that exist
5 in the nonattainment area.

6
7 **UDAQ Response to A-8:** The Maine and Washington state rules do not prohibit the sale
8 and use of outdoor boilers, while Utah does prohibit the sale and use, therefore, R307-
9 208 is the most stringent state rule.

10
11 UDAQ conducted 2 public hearings when we proposed R307-208 in 2013. The same
12 individual boiler owners showed up for both meetings. Public hearings on proposed rules
13 often do not elicit much attention by the public. That was not the case for R307-208. This
14 rule elicited high level of boiler owner emotions and was elevated publicly when Central
15 Boiler, the major manufacturer of outdoor boilers, hired a prestigious Utah citizen as their
16 lobbyist. The lobbyist first challenged the Air Quality Board authority to ban outdoor
17 wood boilers. When he lost that battle, the lobbyist solicited the Utah legislative
18 Administrative Rules Committee to sunset the rule. This action resulted in national
19 exposure, after all, no state had promulgated a total ban of outdoor wood boilers before.
20 A number of wood burning experts across the country signed a letter to
21 the Administrative Rules Committee stating that the information distributed by the
22 lobbyist was not accurate. Ultimately, the legislature did not sunset the rule. The rationale
23 behind providing this historical summary of the rulemaking for EPA is to impress upon
24 EPA the depth at which UDAQ had knowledge of the subject at hand and inventory at the
25 time.

26
27 Outdoor wood boilers are not normally sold in your neighborhood hearth retailer, they are
28 sold by catalogue. The limited method of distribution was advantageous to UDAQ as we
29 searched the internet making sure that distributors soliciting in Utah were aware of the
30 new ban



31
32
33 Furthermore, an outdoor wood boiler installation in a neighborhood would be instantly
34 recognizable and UDAQ would shortly be advised as well. Smell is the best indicator of
35 wood boilers. When there is no demand for heating from these boilers, they smolder.
36 Low stack temperatures result in poor emission dispersion affecting neighbors who

1 ultimately complain to UDAQ. These units would not “fly under the radar” so to
2 speak.

3
4 UDAQ contracted with ICF International in 2015 to conduct a survey of residents in the
5 seven PM nonattainment counties regarding their home heating and wood burning
6 behaviors. Key objectives of the study included estimating the percentage of households
7 in the target area which burn wood and the volume of wood burned. We implemented the
8 survey consisting of up to four mail contacts over an eight-week period to a
9 representative sample of 8,600 addresses within the seven county area. A total of 2,690
10 completed surveys were received, for a response rate of 33.2 percent (using the American
11 Association of Public Opinion Research’s, or AAPOR’s, RR1 formula). Within the study
12 area, some type of wood burning appliance was reported by 32 percent of households.
13 Fireplaces were the most cited wood burning appliance (21%), followed by inserts (7%)
14 and wood stoves (7%). **Other types of wood burning appliances, such as pellet stoves,**
15 **cordwood central furnace, etc. were reported by three percent of respondents.** This
16 survey validated to UDAQ that the use of outdoor wood boilers stayed flat in the 2 year
17 period since the rulemaking. Outdoor wood boilers were never well established in Utah
18 as wood stoves. UDAQ took the opportunity to ban them before they could be established
19 in the airshed. We are confident that our assessment that 50 units exist within the
20 nonattainment airshed is actually an over estimate.

21
22 **Comment Summary A-9:** EPA states that the Motor Vehicle Emission Budgets
23 (MVEBs) were not clearly identified and precisely quantified. EPA attempted to draw a
24 connection between TSD table “vi”, a countywide on-road mobile source emissions
25 inventory table and the SIP MVEB’s table located in Chapter 7 of the SIP. EPA would
26 like to see additional information and references to the TSD in the SIP, as to how the
27 MVEBs were derived for the SIP.

28
29 **UDAQ Response to A-9:** UDAQ agrees with EPA that the TSD did not clearly show all
30 of the steps involved in constructing the MVEBs within the TSD. UDAQ will add a
31 narrative along with four supporting tables to the TSD that identify and precisely quantify
32 how the MVEBs were derived for the SIP. UDAQ will include a reference to the TSD in
33 the SIP regarding how the MVEBs were derived. A correction will be made to table “vi”
34 in the TSD where the PM2.5 values are identical to the PM10.

35
36 **Comment Summary A-10:** EPA would like to see a brief statement in the SIP regarding
37 the development of the 5% Vehicle Miles Traveled applied growth rate along with a
38 reference to the TSD in the SIP.

39
40 **UDAQ Response to A-10:** UDAQ will add a brief statement in the SIP regarding the
41 development of the 5%VMT applied growth rate along with a reference to the TSD.

Comment Summary A-11: EPA would like some clarification in the TSD regarding how the MVEB trading ratios were derived in addition they want a reference to the TSD included in the SIP narrative.

UDAQ Response to A-11: UDAQ will add clarification to the TSD regarding the trading ratio and include a reference in the SIP.

Comment Summary A-12: [submitted by EPA Region 8, Enclosure 4] **Performance of the air quality models with respect to elemental carbon:** Page 41 of the SIP Narrative provides: "[s]imulated fine crustal matter (CM) and elemental carbon (EC) concentrations were a bit higher than observed. The overestimation in these two primary aerosols were the likely result of a high bias in MOVES 2014a (EC) and the re-suspended road dust calculation tool provided by the EPA (CM)." On page 46, UDAQ concludes, "[t]he model, on the other hand, overestimated EC which can be related to an overestimation of EC in Utah's mobile emissions modeling using MOVES 2014a;" While the EPA agrees that re-entrained road dust estimates are possibly biased high when using AP-42 for Utah conditions, there is no demonstrated bias in MOVES for elemental carbon. EPA requests this language be removed.

UDAQ Response to A-12: Following EPA's recommendation, UDAQ will remove the language stating that the model overestimation of EC is related to a high bias in MOVES 2014a. The SIP Narrative will read as follows:

On pp. 41:

Looking at **Fig. 6.2.2**, observed speciated PM_{2.5} mass from the Hawthorne Chemical Speciation Network (CSN) monitor (January 7), there is good agreement in nitrate (NO₃) and ammonium (NH₄) with the CAMx modeling results. The agreement between modeled and observed NO₃ is a benefit from the ammonia injection. Simulated fine crustal matter (CM) and elemental carbon (EC) concentrations were a bit higher than observed. The overestimation ~~[in these two primary aerosols were the likely result of a high bias in MOVES 2014a (EC) and the re-suspended road dust calculation tool provided by the EPA (CM)]~~ of CM was likely the result of a high bias in the re-suspended road dust calculation tool (AP-42).

On pp. 46:

Conversely, the model performance for organic carbon was quite good for January 7, with modeled and observed concentrations being quite comparable. The model, on the other hand, overestimated EC ~~[which can be related to an overestimation of EC in Utah's mobile emissions modeling using MOVES 2014a] and CM~~. Crustal material was ~~[also] likely~~ overestimated~~[, likely]~~ due to an overestimation of re-suspended road dust in the emissions inventory.

1 **Rio Tinto**

2
3 **Comment Summary A-13:** Rio Tinto pointed out that the TSD supporting the adoption
4 of Part A.31 of the PM2.5 SIP includes sections titled “Control Strategies” and “Point
5 Source Baseline Projections, BACT”, within the “Control Strategies” section. UDAQ
6 has included the following BACM analysis for KUC: (1) Kennecott Utah Copper - BCM
7 and Concentrator; (2) Kennecott Utah Copper - Power Plant; and (3) Kennecott Utah
8 Copper - Smelter and Refinery. Within the “Point Source Baseline Projections, BACT”
9 section, and UDAQ has included the BACT workbooks for the above listed facilities.

10
11 There is a concern that the inclusion of these documents could lead to the presumption
12 that public comment on UDAQ’s BACT determinations for KUC’s operations subject to
13 the PM2.5 SIP as well as the technical documents supporting those determinations are
14 subject to the current public comment period.
15

16 **UDAQ Response to A-13:** The proposed Part A.31 of the PM2.5 SIP titled “Control
17 Strategies” and “Point Source Baseline Projections” does not grant the opportunity for
18 comments to be received for the Technical support documents associated with the BACT
19 analysis for KUC: (1) Kennecott Utah Copper - BCM and Concentrator; (2) Kennecott
20 Utah Copper - Power Plant; and (3) Kennecott Utah Copper - Smelter and Refinery. The
21 comment period initiated November 1, 2018, considers the Air Quality Board
22 recommended changes to the “Emission Limits and Operating Practices” Section IX, Part
23 H. These revised Part H limitations were associated with the October 3, 2018 Utah Air
24 Quality Board Meeting. Comments on the proposed changes are being accepted through
25 November 30, 2018.
26
27

28 **Comment Summary A-14:** Rio Tinto requested that UDAQ revise the August 20, 2015
29 wildfire exceptional event documentation to include the value for Rose Park, that was
30 below the standard which led UDAQ to exclude it from the submission. Rio Tinto
31 believes that the Rose Park value for that value has regulatory significance thereby
32 demonstrating attainment.
33

34 The Utah Petroleum Association had the same request. The Association submitted a
35 detailed analysis demonstrating that the August 20, 2015 Rose Park PM2.5 filter value of
36 33.3 ug/m3 has regulatory significance in reaching attainment.
37

38 **UDAQ Response to A-14:** The Rose Park August 20, 2015 PM2.5 filter value was
39 elevated due to smoke from western wildfires. It was not included in the exceptional
40 events filing at the time because it did not exceed the standard. Now that we are able to
41 look at the 2015-2017 averaging period, we see that the Rose Park value on August 20,
42 2015 is the 8th high, or the 98th percentile value for that year and that excluding that
43 value as an exceptional event would lower the predicted 2019 value from 35.9 ug/m3 to
44 35.2 ug/m3, thus predicting attainment. UDAQ will submit a notice of intent to EPA and

1 seek EPA's concurrence to resubmit the exceptional event with the Rose Park data. See
2 **also Response to Comment A-19.**

3
4 **Utah Manufacturing Association**
5

6 **Comment Summary A-15: [submitted by the Utah Manufacturers Association**
7 **(UMA)]:** Members of the UPA have previously shouldered significant costs to
8 substantially curtail emissions in the effort to reach attainment. Further controls from
9 point sources will result in diminishing returns in terms of air quality improvements.
10 Consequently, controls considered by DAQ should be strategically directed and deemed
11 necessary to bring the area into attainment. To that end, UMA supports the comments
12 submitted by the Utah Petroleum Association.

13
14 **UDAQ Response to A-15:** Comment noted by UDAQ.
15

16
17 **Utah Petroleum Association**
18

19 **Comment Summary A-16: [submitted by the Utah Petroleum Association**
20 **(UPA)] Precursor Demonstration:** Based on the reasons presented throughout these
21 comments, UPA recommends that UDAQ adopt a major stationary source precursor
22 demonstration for NO_x, SO_x, VOC, and ammonia, and advocate approval of these
23 demonstrations to EPA.

24
25 Additionally, the WOE discussion in the proposed SIP presents no concerns with the
26 model's capabilities regarding SO_x or VOC, and we see no other objection from UDAQ
27 for these portions of the major stationary source precursor demonstration submitted by
28 UPA. Accordingly, and at a minimum, UPA recommends that DAQ advocate for a
29 major source precursor demonstration for SO_x and VOC.

30
31 Furthermore, considering the very small contribution by the stationary sources to the
32 overall ammonia inventory, UPA recommends that DAQ advocate for an ammonia
33 exemption as well.
34

35 **UDAQ Response to A-16:** UDAQ notes that UPA has submitted its' analyses for each
36 of the four PM_{2.5} precursors (SO₂, NO_x, VOC, and Ammonia). Each analysis concludes
37 that the contribution from major stationary point sources is insignificant when compared
38 to a benchmark of 1.5 µg/m³.
39

40 Of these (Ramboll / UPA) analyses:
41

42 The NO_x analysis is perhaps the most difficult to interpret. The modeled change in
43 PM_{2.5} values, displayed in the matrix of monitor locations and analysis days, indicates a
44 scatter of both positive and negative values. This result may reveal what is called a NO_x
45 dis-benefit, where PM_{2.5} actually increases with a decrease in emissions. While
46 theoretically possible, it is difficult to establish whether the results are in fact

1 representative of current conditions in the Salt Lake Valley. Furthermore, such condition
2 may be transient with respect to time as episodic conditions evolve.

3
4 For VOC the net change in PM_{2.5} is very small. This is likely consistent with the
5 relatively small emissions contribution (roughly 7%) from the major stationary source
6 category.

7
8 For SO_x the net change in PM_{2.5} is highest, yet still below the 1.5 µg/m³ significance
9 level. This result seems consistent with the relative emissions contribution (roughly
10 80%). Still, UPA followed up its (more conservative) concentration-based contribution
11 analysis with a (more refined) sensitivity-based contribution analysis to conclude that the
12 contribution due to major stationary sources was insignificant.

13
14 For Ammonia, the analysis also shows a very small net change in PM_{2.5} due to the
15 contribution from the major stationary source category. As pointed out by UPA, the
16 result would be consistent with the relative emissions contribution (roughly 3%)
17 belonging to the major stationary source category. Yet, the ammonia inventory is itself
18 very uncertain, with 40% of the modeled ammonia having been artificially introduced
19 and therefore not attributable to any of the four general source categories.

20
21 UDAQ also conducted its own analyses (*see attachment*) for each of these PM_{2.5}
22 precursors (SO₂, NO_x, VOC, and Ammonia). The two separate reports were very similar
23 in structure, as would be expected.

24
25 Of particular note, UDAQ made use of the same 1.5 µg/m³ to establish
26 “significance.” EPA’s (November 17, 2016) draft guidance includes a recommendation
27 to use 1.3 µg/m³ when evaluating for the 24-hour PM_{2.5} NAAQS, whereas the UPA
28 precursor demonstration used a less conservative significance threshold of 1.5 µg/m³
29 which stems from a more recent update to the “Technical Basis Document” that underlies
30 the draft guidance. A third value (1.2 µg/m³) has even been discussed in this context,
31 though its basis lies in the Prevention of Significant Deterioration (PSD) program.
32 UDAQ understands that 1.5 µg/m³ is the least restrictive of the three, but also
33 acknowledges that the PM_{2.5} Implementation Rule allows for a less conservative
34 sensitivity-based contribution analysis if the concentration-based contribution analysis
35 does not support a finding of insignificance.

36
37 Still, there were some differences, which included: 1) The use of different emission
38 inventories. UDAQ used a final refined inventory for 2019, while Ramboll used an
39 intermediate inventory because a complete inventory was not yet available at the time
40 their analysis was compiled. 2) UDAQ examined the change in PM_{2.5} over the entire
41 non-attainment area, not just at monitor locations. Spatial fields were plotted for this
42 purpose. 3) Other differences include UDAQ’s scaling of modeled data to measured data
43 from 2011 in order to account for any model bias, 4) UDAQ’s investigation of changes
44 in PM_{2.5} for select individual PM_{2.5} components (nitrate, sulfate and ammonium, which
45 account for most of the PM_{2.5} mass), and 5) Additionally, to consider the potential for a
46 non-linear model response to changes in precursor emissions, particularly NO_x, UDAQ

ran the CAMx Particulate Source Apportionment Technology (PSAT) tool. This module tracks the mass contributions of nitrate (NO_3), sulfate (SO_4) and ammonium (NH_4) from the collection of point sources in the SLC nonattainment area.

UDAQ's conclusions may be summarized as follows:

Again, the NO_x analysis invites some interpretation regarding the potential for a NO_x dis-benefit. UDAQ's analysis also shows a dis-benefit at some locations on some of the analysis days.

However, when adjusted for model bias, the analysis also indicates a change in $\text{PM}_{2.5}$ that is greater than $1.5 \mu\text{g}/\text{m}^3$ at the Ogden (O2) station. The bias adjustment in this case was to apply the relative response of the model to measured $\text{PM}_{2.5}$ data from 2011.

It is also worth noting that when looking at the entire spatial field, values for nitrate (NO_3) exceeding $1.5 \mu\text{g}/\text{m}^3$ may be seen in an area north of the Brigham City monitor. This would also indicate net changes of $\text{PM}_{2.5}$ exceeding $1.5 \mu\text{g}/\text{m}^3$ at these locations.

UDAQ also ran PSAT, which attributes exactly how much of the secondary aerosol (nitrate, sulfate, and ammonium) that may be attributed to the collection of major stationary sources in the SLC nonattainment area. This type of analysis differs from a "brute force" elimination of emissions in that it uses the model in an absolute sense, looking exclusively at the emissions expected from these sources to determine attribution. In this way, the user is able to evaluate the impact from point source emissions at all monitored locations. The PSAT result shows $1.74 \mu\text{g}/\text{m}^3$ of nitrate alone at the Hawthorne station, as well as combined values of all secondary aerosols that exceed $2.5 \mu\text{g}/\text{m}^3$ at Hawthorne and Rose Park.

Yet the question remains: "is the dis-benefit effect realistic considering the actual observations made in the SLC nonattainment area?" And, does this mean the airshed is changing from a NO_x -limited to an oxidant-limited regime? It is of course theoretically possible, but one might also question whether the model has been parameterized well enough to accurately portray the relationship between NO_x and certain oxidants (eg. O_3 and N_2O_5). If not, the modeled results could be misleading.

At this time, and for these reasons, UDAQ will elect not to include a major stationary source precursor demonstration for NO_x as part of the Serious Area $\text{PM}_{2.5}$ SIP for the SLC nonattainment area.

For VOC the net change in $\text{PM}_{2.5}$ relatively small. The highest net change in the value predicted by the model was only $0.62 \mu\text{g}/\text{m}^3$ at the Bountiful location. An examination of the spatial field reveals areas where the $\text{PM}_{2.5}$ change approaches $1.2 \mu\text{g}/\text{m}^3$. As noted above, $1.2 \mu\text{g}/\text{m}^3$ has been used (in PSD guidance) as a similar threshold. However, UDAQ agrees that a $1.5 \mu\text{g}/\text{m}^3$ cut-point is appropriate in this case, and concludes that

1 the net change in PM_{2.5} is insignificant. This result also seems consistent with the
2 relative emissions contribution (roughly 6%) from major stationary sources.

3
4 For SO_x the net change in PM_{2.5} is well over 1.5 µg/m³. The highest net change in the
5 value predicted by the model at a monitor location is 1.54 µg/m³ at Magna. However,
6 when looking at the entire spatial field, the analysis indicates a maximum value of 5.9
7 µg/m³ near the Kennecott smelter. Again, this seems consistent with the relative
8 emissions contribution (roughly 79%) from major stationary sources.

9
10 ***At this time, and for these reasons, UDAQ will elect not to include a major stationary***
11 ***source precursor demonstration for SO_x as part of the Serious Area PM_{2.5} SIP for the***
12 ***SLC nonattainment area.***

13
14 For Ammonia the analysis also shows a very small change in PM_{2.5} (1 µg/m³ max) from
15 the major stationary source category contribution. This is true throughout the entire
16 spatial field. Still, UDAQ remains skeptical of the ammonia inventory, 40% of which
17 has been artificially attributed.

18
19 It is perhaps worth noting that UDAQ recently revised its permitting rules (at R307-403)
20 for PM_{2.5} nonattainment areas, and was unable to conclude that ammonia could be
21 eliminated from New Source Review (NSR), in the SLC nonattainment area, as it had
22 been in the Logan area. UDAQ's contention was (and still is) that it presently lacks the
23 appropriate tools to make such a determination, but that the issue may be revisited at a
24 later time when there is better information at hand.

25
26 ***At this time, and for these reasons, UDAQ will elect not to include a major stationary***
27 ***source precursor demonstration for Ammonia as part of the Serious Area PM_{2.5} SIP***
28 ***for the SLC nonattainment area.***

29
30
31 Also addressed in the UDAQ report, but not in the UPA report, is the potential
32 aggregation of impacts ascribed by each of the singular PM_{2.5} precursor analyses.

33
34 Noting that it may not be appropriate to simply add together each independent result,
35 UDAQ ran the model with no emissions from any of the four precursors belonging to the
36 major stationary sources.

37
38 Results from this "composite" analysis showed multiple exceedances of 1.5 µg/m³
39 throughout the episode, at multiple monitors in SLC nonattainment area. EPA's draft
40 guidance is silent on the issue of "composite" analyses, but it strikes UDAQ as a
41 legitimate question given the facts and circumstances of the SLC nonattainment area.

42
43 Speaking more directly to UPA's petition that UDAQ at least incorporate a precursor
44 demonstration for SO_x and VOC, one might similarly address the additive nature of these
45 two precursors. Assuming, for the sake of discussion, that it would be acceptable to
46 simply add together the two independent results, one could look at the impact of SO_x and

VOC together. In this case the results would show net changes in PM_{2.5} that would exceed 1.5 µg/m³. Obviously this is a forgone conclusion in that the SO_x analysis by itself exceeds the significance threshold.

A final thought concerning the VOC result:

As with the other PM_{2.5} precursors, UDAQ is electing not to include a major stationary source precursor demonstration for VOC as part of the Serious Area PM_{2.5} SIP for the SLC nonattainment area at this time. However UDAQ also notes that the BACT review conducted as part of this SIP resulted in very little additional control for VOC emissions, accompanied by very little additional cost to the major stationary sources.

Were the results of this BACT analysis instead to compel a significant cost to the major stationary sources, UDAQ might be persuaded to invest the additional time necessary to exclude VOC, or for that matter, any precursor from its resulting control strategy.

It is worth noting that UDAQ makes this judgment in light of the BACT analysis, and resulting cost estimates therein, that it proposes to include as part of the overall SIP. UDAQ understands that the SIP must still be reviewed and acted upon by the EPA, and as part of that process, the final BACT determinations could potentially be revised.

Should the resulting control strategy of this Serious Area SIP become substantially more costly, UDAQ might potentially intervene with an addendum to its Plan.

Comment Summary A-17: [submitted by the Utah Petroleum Association (UPA)]:

Timing considerations: DAQ has indicated that it will be performing its own analysis concerning the major stationary source precursor emissions, in consultation with the EPA. It also expressed the need to continue with the rulemaking process required to implement BACT in the event that such additional controls are ultimately deemed necessary. UPA believes that these efforts should proceed on parallel tracks. Furthermore, a final determination of whether to adopt the additional precursor controls at point sources (proposed in Part H) should wait until the DAQ's analysis has been completed and can determine whether such additional controls are necessary or not. Adoption of such additional controls would be inconsistent with a final determination that they are not necessary.

Accordingly, UPA requests that DAQ not conclude a final rulemaking on Part H until it reaches a conclusion on the precursor demonstration. To do otherwise would be contrary to the Utah requirement that the Board adopt only those controls determined necessary.

Should the Board nonetheless decide to take final action on Part H prior to that time, UPA believes it should do so provisionally, making Part H effective contingent upon the outcome of a final decision on the precursor demonstration.

UDAQ Response to A-17: As stated in the responses to **Comment A-16**, UDAQ is electing not to include a major stationary source precursor demonstration for any of the PM_{2.5} precursors at this time. Had UDAQ instead elected to do so, the commenter makes a valid point in that EPA would still have had to approve the demonstration in order that BACT controls for such pollutant(s) would thereby not be required, and this takes time. Meanwhile, by state law, a source may have been faced with a deadline for purchase and installation of control equipment which ultimately may not have been required. Had this been the case, a provisional construction of Part H could have been a suitable path. Since, however, a major stationary source precursor demonstration will not be part of the SIP. It will not be necessary to wait for EPA to render its decision on any such precursor demonstration. Part H may be acted upon by the UAQB without delay.

Comment Summary A-18: [submitted by the Utah Petroleum Association (UPA)]: Modeling Analyses **UDAQ Response to Comment A-18 are presented throughout:**

UPA concurs with much of UDAQ's analysis and overall conclusions in support of its proposed attainment demonstration. UPA's comments demonstrate that the major stationary source precursor demonstration for NO_x, SO_x, VOC, and ammonia is consistent with the State's modeled attainment demonstration and with the proposed SIP. In summary, UPA presents the following comments in support of this conclusion:

Bullet 1: If the model is an appropriate tool for the attainment demonstration, it must necessarily be an appropriate tool for a precursor demonstration. Reliance on the model as a reliable predictor for future year attainment necessarily implies the model's capabilities for purposes of making a precursor demonstration.

Response to Bullet 1: The model's ability to conduct a reliable SIP attainment demonstration is assessed by conducting a model performance evaluation (MPE). Utah DAQ conducted its MPE according to EPA guidance ("Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze", 2014). The MPE entails quantifying model performance for a specific meteorological episode and emissions inventory (EI). For the purposes of the MPE, 2011 wintertime emissions were used; This choice corresponds with the 2011 wintertime meteorological episode used in Utah DAQ's modeling. The MPE conducted by UDAQ is referred to as an "operational" model evaluation.

A "dynamic" model evaluation with respects to evaluating EI changes was not conducted by UDAQ. A major issue is that it's expensive to have quality meteorological model data available for multiple episodes. WRF performance for other meteorological episodes considered by UDAQ were not as good for the Salt Lake Valley as the 2011 episode ultimately chosen for the SIP modeled attainment demonstration. When evaluating the modeled response to EI changes, it would have been difficult to disentangle the effects due to WRF performance from the effects due to EI changes. A dynamic performance evaluation would be ideal in assessing the model's ability to conduct a precursor demonstration. But for the aforementioned reasons, a dynamic performance evaluation was not considered.

Bullet 2: If UDAQ determines not to use the model to determine whether imposing additional controls on major stationary source precursor emissions are necessary, then it must provide some alternative basis for determining that additional controls are, in fact, necessary before it proceeds to adopt such controls.

Response to Bullet 2: Regardless of whether the Serious Area SIP for the SLC PM_{2.5} nonattainment area includes a major stationary source precursor demonstration, UDAQ must determine BACT for PM_{2.5} as well as PM_{2.5} precursors. This is required by the PM Implementation Rule *unless* the EPA has approved the demonstration. UDAQ cannot know whether the EPA has approved the precursor demonstration until after the SIP, including the BACT element, has been submitted.

Bullet 4: UPA agrees that the majority of the ambient PM_{2.5} problem in the Salt Lake City nonattainment area results from secondary PM_{2.5} arising from precursor emissions. On the other hand, UPA finds that a substantial portion of the nonattainment area ambient PM_{2.5} arises from direct PM_{2.5} emissions.

Response to Bullet 4: A non-negligible portion of wintertime peak PM_{2.5} mass is associated with direct PM_{2.5} emissions. For example, UDAQ estimates that along with car exhaust, residential wood-smoke accounts for a significant fraction of primary organic carbon (POC). POC, itself, could account for nearly 10% of PM_{2.5} filter mass during peak wintertime PM_{2.5} events. However, rules are already in place to ban residential wood-smoke emissions during periods when elevated wintertime PM_{2.5} is likely observed. Statewide rules that mandate fugitive dust suppression, have also been enacted already. It's not clear what other controls of direct PM_{2.5} would make meaningful contributions to lowering wintertime PM_{2.5} pollution.

Bullet 6: Notwithstanding its conclusion that the model performs well, the weight of evidence discussion ("WOE discussion" or "WOE") offered in the attainment demonstration seems to inconsistently and, in several instances, we believe incorrectly, question the model's capabilities. Ramboll, the developers of the CAMx model used for both the attainment demonstration and the major stationary source precursor demonstration, performed an evaluation of the WOE discussion which we include as part of these comments. UPA recommends modifying the WOE discussion in the proposed SIP in accordance with the Ramboll evaluation of it. We highlight two of Ramboll's observations in its evaluation of the WOE:

1. The model replicates observed conditions well and its response to emission reduction may be considered reliable in view of the models overall performance evaluation.

2. Model-measurement comparisons suggest that the model may be less NO_x-saturated than actual conditions at times, suggesting that in reality, additional NO_x controls in the Salt Lake City nonattainment area may be even less effective than the model predicts.

Response to Bullet 6: CAMx is a state-of-the-art model approved by the EPA for the purposes of conducting a SIP modeled attainment demonstration. Much of the uncertainty that underlies UDAQ's modeling efforts has to do with model inputs, not the model itself. For example, UDAQ'S usage of a coarsely resolved ammonia (NH₃) emissions inventory. However, these inputs were considered the best available at the time of conducting the modeled attainment demonstration. UDAQ also made modifications to the model to account for local conditions impacting PM_{2.5} formation in the region. Some of these changes (e.g., ammonia deposition, urban surface albedo) have been incorporated by Ramboll in recent versions of CAMx.

Modeled NO_x and O₃ are on par with 2011 Hawthorne measurements, with some exception of January 5 - 6, 2011 with less NO_x and more overnight O₃ being produced in the model. But overall, it's not clear if the model is less NO_x saturated than measurements suggest.

Comment Summary A-19: [submitted by the Utah Petroleum Association (UPA)]: UPA recommends making two enhancements to the monitoring data that provide the basis for the attainment demonstration. These are discussed here in A-19 and below in A-20.

Enhancement 1: Exceptional Event at Rose Park: The UPA believes that UDAQ should move its discussion of the August 20, 2015, exceptional event for the Rose Park monitor from the Supplemental Analysis (portion of 6.2 Weight of Evidence) to the principal future year modeled attainment demonstration.

As presented, the modeled attainment test for the Rose Park monitor falls just short of attainment, predicting a 2019 future year design value of 35.9 µg/m³. Excusing the August 20, 2015 value collected at Rose Park as an exceptional event would effectively allow UDAQ to predict attainment in the modeled attainment demonstration for 2019.

Even though the Rose Park monitor did not exceed the level of the standard on that date, the monitor result from that date could have been addressed in the formal exceptional event demonstration.

UDAQ Response to Comment A-19: UDAQ agrees with the commenter that the August 20, 2015 value collected at Rose Park can be flagged as an exceptional event, even though it did not exceed the level of the 24-hour PM_{2.5} standard. Clearly, its effect on the monitored design value for this SIP gives it regulatory significance.

UDAQ has recently provided EPA with the documentation necessary to exclude this value for regulatory purposes, and is discussing with the Agency the most appropriate way to do so.

1 However, at this time UDAQ is not proposing to restructure and re-propose the SIP in
 2 order to make use of such data exclusion in consideration of the modeled attainment
 3 demonstration. UDAQ remains satisfied that the demonstration at large still shows a
 4 likelihood of attainment in 2019. **See also Response to Comment A-14.**

7 **Comment Summary A-20:** Enhancement 2: UPA recommends substituting the
 8 maximum measured values during the 2nd and 3rd quarters for all missing data in those
 9 quarters of 2016.

11 **UDAQ Response to A-20:** A similar methodology to that proposed by the commenter is
 12 discussed in 40 CFR 50 Appendix N 4.2(c)(i). It is only allowed for quarters with
 13 completeness less than 75% but at least 50 percent:

15 “Identify for each deficient quarter (i.e., those with less than 75 percent but at
 16 least 50 percent data capture) the highest reported daily PM_{2.5} value for that
 17 quarter, excluding state-flagged data affected by exceptional events which have
 18 been approved for exclusion by the Regional Administrator, looking across those
 19 three quarters of all three years under consideration. If, after substituting the
 20 highest reported daily maximum PM_{2.5} value for a quarter for all missing daily
 21 data in the matching deficient quarter(s) (i.e., to make those quarters 100 percent
 22 complete), the procedure yields a recalculated 3-year 24-hour NAAQS test DV
 23 (TDV_{max}) less than or equal to the level of the standard, then the 24-hour PM_{2.5}
 24 NAAQS DV is deemed to have passed the diagnostic test and is valid, and the 24-
 25 hour PM_{2.5} NAAQS is deemed to have been met in that 3-year period.”

27 The Rose Park monitor meets the completeness requirement for all four quarters; 97%,
 28 84%, 82%, and 91% consecutively. As such, if data substitution is to be implemented to
 29 increase the number of valid days it should be done for all four quarters. If this data
 30 substitution were to be implemented, the 98th percentile value for 2016 at the Rose Park
 31 station would increase and negate any potential benefit from the data substitution.

33 Alternatively, UDAQ did investigate the possibility of using measurement from the
 34 Hawthorne station for the missing values at Rose Park. When this substitution was
 35 completed the 98th percentile value for 2016 at Rose Park was the same as it had been.
 36 This is due to a missing day during an inversion period December of 2016.

38 **Comment Summary A-21:** [submitted by the Utah Petroleum Association
 39 (UPA)]: Weight of Evidence discussion **UDAQ Responses to Comment A-21 are**
 40 **presented throughout:**

42 The proposed SIP includes a WOE discussion, part of which purports to explain why the
 43 agency believes the model does not respond well to NO_x controls. The WOE emphasizes

1 potential concerns regarding the ability of the model to predict ambient changes in PM_{2.5}
2 levels resulting from reductions in NO_x emissions.

3
4 UPA retained Ramboll, the developers of the CAMx model, to evaluate the WOE
5 discussion in the proposed SIP. The Ramboll evaluation report entitled, "Comments on
6 Serious Area PM_{2.5} State Implementation Plan for the Salt Lake City, UT Nonattainment
7 Area: Section IX. Part A.31. Control Measures for Area and Point Sources, Fine
8 Particulate Matter; Chapter 6, Attainment Demonstration; and Section 6.2, Weight of
9 Evidence", included as part of these comments as Attachment A, provides additional
10 discussion for the following points:

11
12 Based on the discussion in the Ramboll evaluation report, UPA recommends revising the
13 WOE discussion in the proposed SIP accordingly.

14
15 **First Bullet:** The WOE offers insufficient evidence that the model's response is
16 inconsistent with observed conditions and trends to support the hypothesis that the model
17 does not respond appropriately to emission reductions due in part to model uncertainty
18 associated with PM-forming chemical interactions.

19
20 **Response to First Bullet:** The Weight of Evidence (WOE) discussion notes that the
21 modeling guidance allows for the consideration of supplemental information and analyses
22 when assessing future attainment in an area such as SLC. Specifically identified as
23 candidates for such supplemental information, are trends in both emissions and ambient
24 (monitoring) data. These observed trends reflect past and current conditions in the
25 airshed. Modeled evaluations, by contrast, are theoretical in their construction and will
26 always include some level of uncertainty.

27
28 The WOE does not state conclusions regarding the model's ability to re-create observed
29 conditions or the model's ability to respond accurately to emissions reductions. By
30 "model uncertainty", it should be understood that we do not know the performance
31 impacts (if any) from the issues raised in the WOE. However, the uncertainties raised in
32 the WOE could explain why modeled future design values (FDV) for Salt Lake County
33 monitors were higher than expected given significant future-year emissions reductions.

34
35 **Second Bullet:** A calculation based on emission inventories and design values for the
36 Salt Lake City nonattainment area suggests that model-estimated 2019 design value
37 projections are consistent with observed trends in PM_{2.5} concentrations and precursor
38 emissions.

- 39
40 a. The Speciated Modeled Attainment Test (SMAT) relies on a PM_{2.5} speciation
41 based on 2011 measurements rather than speciation for 2016 consistent with the
42 base year emission inventory. This is inconsistent with EPA modeling guidance,
43 which recommends using speciated measurements from the base year for the
44 SMAT. The design value projections could be sensitive to this choice.
45

Response to Second Bullet: Regarding Step 7 of the calculation referenced above, UDAQ disagrees that not using 2016 monitored speciation data is a “serious omission”. To test the sensitivity of the design value projections against the choice of speciation year, UDAQ conducted multiple SMAT sensitivity runs where different speciation years were used. Although the EPA modeling guidance recommends using speciated measurements from the base year when running SMAT, UDAQ applied the speciation data from 2011 since, compared to other years, the speciation profile for 2011 was more representative of typical wintertime inversion episodes.

Third Bullet: The actual chemical environment appears to be influenced by the lack of oxidants relative to the abundant availability of NO_x (an oxidant-limited condition). The model replicates observed conditions well and its response to emission reduction may be considered reliable in view of the models overall performance evaluation.

Response to Third Bullet: The Utah Wintertime Fine Particulate Study Final Report suggests that North Salt Lake County may be more NO_x-rich as compared to the rest of the Wasatch Front. The model performance evaluation (MPE) in the technical support documentation (TSD) shows good agreement between modeled and observed PM_{2.5} composition and mass; particularly as model performance relates to secondary PM_{2.5} species. The model’s general NO_x performance is good, but the model’s performance with regards to VOC’s and oxidants is not quite as good. So, it’s unclear how accurate is the model’s response to emissions reduction.

Fourth Bullet: Statements in the WOE about nitryl chloride chemistry are incorrect. The version of the model used by UDAQ does in fact include the formation of ClNO₂ and nitric acid (HNO₃) via heterogeneous nighttime reactions among hydrochloric acid (HCl) and dinitrogen pentoxide (N₂O₅), and the daytime photolysis of ClNO₂ generating nitrogen dioxide (NO₂) and chlorine radicals.

Response to Fourth Bullet: While the version of the CAMx model used by UDAQ includes the formation of nitryl chloride (ClNO₂) and nitric acid via heterogeneous nighttime reactions among hydrochloric acid (HCl) and dinitrogen pentoxide (N₂O₅), the model does not include the chemical pathway where ClNO₂ is formed through the heterogeneous uptake of N₂O₅ on chloride-containing particles. This pathway is particularly active in the Salt Lake Valley, where ammonium chloride aerosol accounts for 15% of PM_{2.5} mass during high-PM_{2.5} episodes. This heterologous pathway for N₂O₅ uptake on Cl-containing particles is the pathway that UDAQ is referring to in the weight of evidence analysis.

Fifth Bullet: Model-measurement comparisons suggest that the model may be less NO_x saturated than actual conditions at times, suggesting that in reality, NO_x controls in the Salt Lake City nonattainment area may be even less effective than the model predicts.

Response to Fifth Bullet: Comparisons between observed and modeled NO_x concentrations show generally good agreement across the episode save for two PM_{2.5}

concentration build-up days prior (January 5 - 6). It's not clear if the effects from NOx controls in the Salt Lake nonattainment area would be exaggerated in the model.

Sixth Bullet: Given the WOE emphasis on ammonia uncertainty, the analysis needs a quantitative analysis of how the modeled nitrate reacts to the ad hoc ammonia "injection", an investigation into the effects of ammonia uncertainty on particulate matter formation, and quantification to provide context for the attainment demonstration results.

Response to Sixth Bullet: UDAQ used an iterative process to calculate how much ammonia (NH₃) emissions would ultimately be injected into the modeling domain. Modeled NH₃ was compared to ambient NH₃ measurements taken at different Wasatch Front counties. Ultimately, modeled NH₃ concentrations are considered in range of observed NH₃. Particulate nitrate (PNO₃) model performance improved due to ammonia injection, but PNO₃ performance wasn't the primary criteria when considering the amount of ammonia injected. The ammonia injection process is detailed in the technical support documentation (TSD).

Seventh Bullet: Crustal matter is not inert. Over-predictions of crustal matter can affect the total nitrate budget and may slightly increase particulate nitrate reduction from NOx controls.

Response to Seventh Bullet: While crustal material can provide a surface onto which nitric acid can condense to form particulate nitrate - a pathway that is included in CAMx -, the contribution of crustal material to the total nitrate budget is expected to be small. Although crustal material is overestimated in the model (modeled contribution to PM_{2.5} of 8.5% compared to measured contribution to PM_{2.5} of 1.8% on peak PM_{2.5} days), its contribution and relative abundance is still small compared to that of ammonia, which is an important nitric acid neutralizing agent. The impact of crustal matter overprediction on the total nitrate budget and particulate nitrate reduction from NOx controls is therefore expected to be minor. Moreover, further research and measurements are needed to better understand the role of crustal matter in PM_{2.5} chemistry in the Salt Lake airshed.

Comment Summary A-22 [submitted by the Utah Petroleum Association (UPA)]:
Statement in State Bulletin: The Utah State Bulletin public notice for the major stationary source precursor demonstration includes several statements, including concerns, expressed by UDAQ with the precursor demonstration. The following provides UPAs responses to each statement:

· UPA agrees that UDAQ should perform its own major stationary source precursor demonstration analysis in conjunction with EPA.

· To the statement that "Ambient PM_{2.5} in the [Salt Lake City nonattainment area] airshed is largely composed of secondary PM_{2.5} formed by precursors, not primary [direct] PM_{2.5}." Direct PM_{2.5} contributes substantially to the Salt Lake City

1 nonattainment area as well as precursor emissions and must be accounted for in order to
2 develop an effective long-term attainment strategy.

3
4 · To the statement that "...empirical evidence points to the success in declining
5 concentrations of ambient PM_{2.5} from controlling precursor emissions." While UPA
6 agrees that precursors contribute generally to PM_{2.5} levels in the airshed and that existing
7 controls of those emissions have aided in the current attainment trajectory, the science
8 shows that imposing additional controls on the diminishing inventory of precursor
9 emissions from major stationary sources would make an insignificant contribution to
10 reducing ambient PM_{2.5} levels in the Salt Lake City nonattainment area. Accordingly,
11 these sources should not be subject to additional controls for their precursor emissions.

12
13 · To the statement that "...Utah continues to look at controls that may only produce
14 marginal benefits. Therefore, the threshold established in the draft guidance may not be
15 appropriate in the [Salt Lake City nonattainment area], particularly when looking at the
16 precursors cumulatively." UPA recommends that, EPA existing precursor demonstration
17 regulations and guidance serve as the standards and criteria for the major stationary
18 source precursor demonstration in Utah.

19
20 · To the statement that the "...weight of evidence discussion ... illustrates potential
21 shortcomings in the model" and that "UPA's analysis with the same model may have
22 perpetuated these same shortcomings." UPA comments that the model performs well, as
23 stated throughout the TSD for the model performance evaluation and throughout the
24 model performance evaluation section of the proposed SIP.

25
26 **UDAQ Response to A-22:** UDAQ acknowledges the counterpoints made by UPA, and
27 notes furthermore that they have been addressed throughout this document. However, the
28 context of these concerns speaks to the public notice made in the Utah State Bulletin and
29 not to the proposal itself.

30
31 **Comment Summary A-23:** In addressing BACM as it applies to Residential Wood
32 Combustion, UDAQ only looked beyond the four serious NAAs identified if those areas
33 had not enacted a comparable area source rule. Such a restriction is in conflict with
34 section 51.1010, which does not limit UDAQ's review to serious nonattainment areas
35 (NAAs). UPA raises additional concerns throughout its comments. Each is addressed
36 below:

37
38 **UDAQ Response to A-23:** The BACM analysis focused on serious nonattainment areas
39 with the rationale that those areas would have the most advanced/strict control measures
40 approved by EPA. The BACM analysis was not although limited to serious
41 nonattainment area rules. The BACM analysis states, "Additional air district rules may
42 also be reviewed if the air districts listed" (i.e., serious nonattainment areas for PM_{2.5}
43 and precursors) in the BACM analysis, "do not have a comparable UDAQ rule." Section
44 51.1010(2)(ii) states, "The state shall survey other NAAQS nonattainment areas in the
45 U.S. and identify any measures for direct PM_{2.5} and PM_{2.5} plan precursors...." It does
46 not specifically limit us from focusing our survey on serious nonattainment areas. It

1 would be highly unlikely that moderate nonattainment areas would have BACM rules
2 rather than RACM rules. Ultimately, we discovered that many of our area source rules
3 are more stringent than BACM. For example, Utah is the only state we are aware of that
4 has banned outdoor wood boilers.

5
6 UPA Comment: Mounting evidence that wood residential burning contributes
7 significantly to the Salt Lake NAA. UDAQ may have underestimated the emissions
8 attributable to wood residential burning.

9
10 UDAQ Response: Emissions inventories are continuously improved as new information
11 becomes available. UDAQ is scheduled to conduct additional wood residential burning
12 research during the 2018-2019 winter.

13
14 UPA Comment: UDAQ failed to evaluate portions of the San Joaquin Valley Air
15 Pollution Control District (SJVAPCD) Rule 4901. UPA provided specific comparisons
16 between Rule 4901 and R307-302.

17
18 (1) Burn ban: Rule 4901 burn ban threshold for Level One is at 20 ug/m3 as compared to
19 25 ug/m3 in R307-302.

20
21 UDAQ Response: Rule 4901 Level One threshold is lower than R307-302 but it does not
22 include all wood burning devices. SJVAPCD offers owners of EPA certified stoves who
23 pay a registration fee to burn during their Level One restriction period. R307-302 does
24 not offer any type of device an exemption from the restricted burn days, including EPA
25 certified wood stoves.

26
27 (2) UPA cites section 5.6.1.2 that permits certain type of burning when restricted burning
28 is in effect. UPA then compares it to R307-302-3(4), insinuating that it is less restrictive
29 than Rule 4901.

30
31 UDAQ Response: We do not understand UPA's rationale for this comment as R307-302
32 is clearly more restrictive since only sole source homes who are registered with UDAQ
33 may burn wood during restricted periods.

34
35 (3) UPA comparison of rule text regarding allowable wood burning devices that may be
36 sold.

37
38 UDAQ Response: While Rule 4901 section 5.1.1 is more descriptive than R307-302-6(1),
39 they ultimately mean the same thing and that is that only EPA certified wood burning
40 devices may be sold, installed or transferred.

41
42 (4) UPA Comment: Section 5.2.1 of Rule 4901 restricts the sale of a home containing an
43 uncertified wood burning device.

44
45 UDAQ Comment: UPA is correct, Rule 4901 is more stringent than R307-302-6(2) that
46 offers an exemption for wood burning devices that already exist in the home before the

1 sale. UDAQ has determined that the provision in Rule 4901, Section 5.2.1 is likely more
2 restrictive than BACM and is more akin to MSM because real estate provisions are not
3 commonly included in wood burning rules. There has also been a formal rejection of this
4 concept by the Utah Real Estate Association during past SIP public rule making comment
5 period.

6
7 (5) UPA Comment: New residential development restrictions on the types and amount of
8 wood burning devices.

9
10 UDAQ Comment: UPA is correct, R307-302 does not include similar a restriction
11 because the Air Quality Board does not have the authority to amend the housing code.

12
13 (6) UPA Comment: Rule 4901 Section 5.1.3 requires retail vendors to provide the public
14 with wood burning awareness information.

15
16 UDAQ Comment: UPA is correct, R307-302 does not include an equivalent provision.
17 UDAQ may consider this provision for future rule revision.

18
19 (7) UPA Comment: UPA states that R307-302 does not have an equivalent provision in
20 Rule 5.4.1 section 5.4.1, seasoned wood sales requirement.

21
22 UDAQ Comment: UPA is incorrect, R307-302-5(3) prohibits the burning of all wood
23 that is not seasoned, which is actually broader than just sold wood.

24
25 In summary, UPA states that UDAQ has not adopted all of the provisions of rule 4901
26 pursuant to 40 CFR 51.1010. We disagree that all provisions of any or all rules surveyed
27 as part of the BACM analysis must be adopted by UDAQ. What is BACM in SJVAPCD
28 is not necessarily BACM in the Salt Lake NAA. The purpose of the rules survey is to
29 gain ideas of control strategy that MAY be appropriate for a specific nonattainment area
30 and that may lead to gains toward attainment. The only provision in Rule 4901 that is not
31 found in R307-302 that may actually result in measurable gains toward attainment is the
32 restriction of wood burning devices in new development. We believe that such restriction
33 is actually MSM and is more appropriate to be legislated through building code.

34
35 UPA Comment: UDAQ's conclusion that R307-302 is more stringent than the
36 corresponding San Joaquin control measures is predicated on the flawed premise that
37 R307-302 will achieve 100% compliance with the burn ban. Under this hopeful, but
38 unrealistic, premise, UDAQ concludes that there is simply no reason to evaluate other
39 measures.

40
41 UDAQ Response: UDAQ has published research data that has shown that burn ban
42 compliance is in fact lower than expected. We agree with UPA that R307-302 may be
43 enhanced through a public stakeholder process, including a MSM control measure of
44 restricted real estate sale of uncertified stoves. Nonetheless, as stated above, revisions to
45 R307-302 within the authority of the Air Quality Board would not likely result in
46 substantial gains toward attainment. A housing code change restricting amount of wood

1 burning appliances that may be installed in new development would be required to realize
2 substantial gains toward attainment. Housing code amendment is the purview of the
3 Legislature and not the Air Quality Board. Conversion of existing residential wood
4 burning appliances to gas is another way to gain measureable emission reductions but
5 requires huge sums of funding. UDAQ is currently implementing a conversion program
6 using EPA grant funding and is also working on the next Airshed grant proposal for more
7 conversion funding.

8
9 UPA Comment: UDAQ failed to survey the residential wood combustion controls from
10 numerous other NAAs. UPA specifically points out Fairbanks, AK, Tacoma, WA, and
11 Portola, CA.

12
13 UDAQ Response: Fairbanks staff and contractors have consulted with UDAQ staff
14 numerous times over the course of their SIP development, which is focused upon
15 residential wood combustion. Consequently, we are well aware of the Fairbanks SIP
16 development. Their SIP is due to EPA December 2018. The BACM analysis was
17 conducted before the Fairbanks Rule 18 could be evaluated and approved by EPA. It is
18 inappropriate to consider a nonattainment rule before EPA has acted on it. Further, the
19 Fairbanks voter-approved Home Heating Reclamation Act (Proposition 4) has relieved
20 the Borough of the authority to restrict wood burning which raises the specter of the
21 rulemakings future.

22
23 UPA specifically points to the Tacoma, WA requirement of not more than 20% wood
24 moisture content. EPA does not define the term seasoned wood. The Chimney Safety
25 Institute of America defines seasoned wood as having a moisture content between 20-
26 25%. UDAQ chose to use the upper boundary to provide a margin (see R307-302-1(2)).

27
28 UPA also points out that Tacoma, WA has issued emission standards for solid fuel
29 burning devices. UDAQ is not qualified to develop emission standards for devices nor do
30 we have a way to test devices. We leave that business to the EPA, as do many other
31 states.

32
33 UPA cites the Puget Sound Clean Air Agency regulation 1-13.07 that requires uncertified
34 stoves to be disposed of by September 30, 2015. The Utah Legislature made it clear via
35 House Bill 396 in 2015 that UDAQ does not have the authority to ban wood burning.
36 Consequently, UDAQ is careful to avoid any rule making that appears to violate the spirit
37 of HB 396.

38
39 UPA cites the City of Portola Ordinance No. 344 that includes a real estate wood burning
40 stove removal requirement, a wood moisture content of 20% and a retailer wood burning
41 information decimation requirement to its customers. All of these have already been
42 discussed in text above.

43
44 UPA also cited wood stove registration and inspection as an option, and a number of
45 other requirements that would require fiduciary authority that the Air Quality Board does
46 not have.

1
2 UPA Comment: UDAQ should acknowledge that the contingency measure in R307-302-
3 3(5) that lowers the burn ban threshold to 15 ug/m3 has been triggered when we did not
4 attain the NAAQS.

5
6 UDAQ Response: In practice, UDAQ calls restricted burning days in accordance with the
7 provision of R307-302-3(4), allowing UDAQ to restrict burning when we are able to
8 forecast a coming inversion. Consequently, UDAQ could restrict burning when the
9 ambient PM2.5 level is below 15 ug/m3.

10
11 UPA Comment: VOC and SO2 emission from wood burning were not included in the
12 BACM analysis.

13
14 UDAQ Response: That is not correct, VOC and SO2 emissions from wood burning were
15 covered in the BACM.

16
17 UPA Comment: R307-302-5 does not prohibit the use of coal in the Salt Lake NAA.

18
19 UDAQ Response: Before 2012, R307-302 only applied to wood burning. In August of
20 2012, the Air Quality Board approved the addition of the term "solid fuel," thereby
21 moving away from strictly prohibiting the burning of wood. Subsequently, the Board
22 changed the name of the rule to Solid Fuel Burning Devices...thereby regulating all solid
23 fuels (i.e., including coal) except for those that are sole source of heating as permitted by
24 statute.

25
26 UDAQ knows that some coal burning does exist in mostly remote areas of the Salt Lake
27 NAA via our management of the sole source registry. The Legislature provided \$500,000
28 for the conversion of sole source homes on the Registry to natural gas/propane. Some of
29 those homes used coal for heating and had to switch to propane because natural gas is not
30 available in their area. Overall, the natural gas distribution in the Salt Lake NAA is well
31 developed such that a large majority of the residences have access to natural gas. The
32 Legislature has repeatedly advised UDAQ that we must not unduly infringe on residential
33 rights. Prohibiting coal burning without compensation for the conversion would be an
34 infringement. Further, most coal burning that we are aware of meet the definition of sole
35 source. Banning all coal burning would be counter to the statutory rights of sole sources.
36 Since the Air Quality Board does not have primacy over statute nor fiduciary authority, it
37 would be illegal and irresponsible to propose a coal burning prohibition.

38
39 **Wasatch Clean Air Coalition**

40
41 **Comment Summary A-24:** [submitted by the Clean Air Coalition]: U.S. Magnesium

42
43 Ammonium chloride contributes up to 15% of the PM2.5 on exceedance days. A 2015
44 study by Randy Martin "Measurement of Ambient Hydrochloric Acid near Utah's Great
45 Salt Lake" eliminated the GSL as well as the oil refineries as sources for the chloride, and
46 includes a contour plot that clearly points to U.S. Magnesium as [the] source. The Utah

Petroleum Association also commented to the effect that U.S. Magnesium is the only significant source of chloride emissions in the SLC area, and that it contributes “significantly” to nonattainment. Utah should impose controls on U.S. Magnesium as a necessary step towards achieving attainment.

UDAQ Response to A-24: While aerosol chloride and HCl account for a significant fraction of PM_{2.5} during wintertime episodes, their sources are unclear. The contribution of US magnesium to HCl and chlorine emissions is particularly unclear. While recent measurements (Randy Martin's "Measurement of Ambient Hydrochloric Acid near Utah's Great Salt Lake") suggested that US magnesium is a major source of HCl emissions in the Salt Lake Valley, these measurements were conducted in the summer and do not reflect typical wintertime inversion episodes. Transport is inhibited during wintertime cold air pool conditions because surface winds are relatively weak during these periods. Also, The study referenced used only 13 passive samplers at fixed locations in the Salt Lake Valley. HCl concentrations were averaged over two 7-week periods and one 5-day period. Additional measurements are needed to understand the contribution of US Magnesium to HCl emissions and particulate chloride formation. Moreover, the contribution of other sources, such as the Great Salt Lake, road salt and playa dusts from dry salt beds to HCl and particulate chloride is unclear. UDAQ is conducting a field sampling campaign in winter 2018-2019 to better understand the contribution of US Magnesium to chlorine and HCl emissions and its role in ammonium chloride formation. Imposing controls on US magnesium may be premature at this point. **See also Response to Comment A-36.**

Western Resource Advocates

Comment Summary A-25 [submitted by Western Resource Advocates et al.]: From *Section II., Analysis of the Draft Serious SIP: BACM/BACT:*

Comment 1: The Director Must Derive and Implement BACM.

Comment 2: BACT Represents the Maximum Reduction of Emissions Achievable.

Comment 3: BACM is “Generally Independent” of Attainment.

Comment 4: Measures Adopted in Other States Are Assumed to be Technologically Feasible.

Comment 5: BACT Will Be More Expensive than RACT.

UDAQ Response to A-25: UDAQ acknowledges the commenters’ review of the PM_{2.5} Implementation Rule and other pertinent requirements.

Comment Summary A-26 [submitted by Western Resource Advocates et al.]: From *Section III., Specific Comments A: BACT:* The Director failed to derive and implement

1 BACM for the Salt Lake NAA, relying chiefly on regulations and measures adopted as
2 RACM. The Director has not: 1) showed that he has developed and imposed measures
3 for every sector that represent the maximum achievable reductions of emissions; 2)
4 produced a complete review of measures adopted in other states; 3) established why
5 measures adopted in other states are not technologically or economically feasible in Utah;
6 4) applied BACM's "higher economic costs" analysis; and 5) provided objective data to
7 support its contentions.

8
9 Given that the Director's modeling cannot show that the emission reductions required by
10 the SIP are adequate to show attainment, the Director's refusal to adopt control strategies
11 that are demonstrated to be technologically and economically feasible in other states is
12 contrary to the requirements imposed by the Clean Air Act.

13
14 **UDAQ Response to A-26:** UDAQ disagrees with the commenter. In re-reviewing the
15 control measures included as RACM in Utah's Moderate Area PM_{2.5} SIP for the SLC
16 nonattainment area, it was determined that in most cases these measures were in fact
17 already stringent enough so as to also meet BACM. During the development of the
18 moderate area PM_{2.5} SIP, UDAQ was well aware of the potential possibility of eventually
19 being reclassified as a serious nonattainment area. UDAQ was in communication with
20 EPA throughout the development process and had discussed the possibility and potential
21 consequences throughout that development period. During negotiations with the listed
22 sources, UDAQ always made clear to them that they should view potential controls as
23 being "better than RACT" and to "focus on BACT-level controls." UDAQ knew and
24 explained that potentially revisiting this issue with the possibility of replacing "just
25 installed" controls would be an expensive and unpopular undertaking – so better to focus
26 on the higher level of control from the outset. Utah's review of potential controls entails
27 measures that address primary PM_{2.5} and precursors to secondary PM_{2.5}, reveals a
28 canvassing of other states, addresses technological and economic feasibility, concludes
29 that the cost benefit in terms of dollars spent per ton of emissions reduced is consistent
30 with contemporary BACT analyses. This is documented in the materials provided as
31 technical support.

32
33 The commenter's contention that Utah has not included every control measure
34 implemented in any other state is more consistent with the idea of Most Stringent
35 Measures (MSM) than BACM. MSM is not required for the SLC nonattainment area.

36
37 **Comment Summary A-27:** The director has not established whether the contingency
38 measures in the SIP will provide for emissions reductions equivalent to one year's share
39 of reductions needed to demonstrate attainment. In addition, the Director did not state
40 whether the DERA emissions reductions had already been quantified and included in the
41 control strategy for the Salt Lake NAA.

42
43 **UDAQ Response to A-27:** The control strategy analysis summarized in Chapter 5 shows
44 that stationary point sources meet BACT and area sources meet BACM. On-road mobile
45 sources still contribute the majority of emissions, including primary PM_{2.5} and all of the
46 precursors except SO₂. Further emission control in this category extends beyond the

1 authorities of UDAQ. While DERA grants provide a non-regulatory opportunity to
 2 reduce emissions for mobile sources, there is currently not enough funding to
 3 demonstrate a year's worth of emissions reductions in the Salt Lake NAA with the
 4 proposed contingency measures. Control measures developed to meet increasingly
 5 stringent ozone and PM_{2.5} standards in Utah's urbanized areas have likewise become
 6 increasingly stringent, and still it is a challenge to attain the 2006, PM_{2.5} NAAQS. This
 7 leaves little room for additional reductions that can be set aside as contingency measures.

8
 9 Requirements of DERA grants include vehicles that are being retired early in order to
 10 achieve actual emissions reductions for what would have been the remainder of the
 11 vehicle's life. The emissions reductions resulting from DERA vehicles were not
 12 accounted for in MOVES calculations for modelling for this SIP. MOVES assumed a
 13 typical retirement schedule for all fleets, and did not include early retirement for any of
 14 the DERA funded vehicles included in the serious SIP. Therefore, DERA emissions
 15 reductions had not already been quantified and included in the control strategy for the
 16 Salt Lake NAA. **See also Response to Comment A-7.**

17
 18 **Comment Summary A-28 [submitted by Western Resource Advocates et al.]:** *From*
 19 *Section III., Specific Comments C: Milestone Requirement:* "Serious area attainment
 20 plans must include quantitative milestones that demonstrate RFP towards attainment to
 21 be achieved every 3 years until the area is redesignated to attainment." (81 Fed. Reg. at
 22 58091). Yet the Director has not complied with this requirement. The first milestones
 23 must have been achieved in the Salt Lake NAA by the end of 2017 and the report for the
 24 Salt Lake NAA came due in the first quarter of 2018. However, no such report was
 25 prepared or submitted to EPA and the Draft Serious SIP makes no effort to comply with
 26 this regulatory obligation. As a result, the Director has failed to meet his
 27 obligations. Further, the Director is obligated to continue to designate, achieve and report
 28 milestones after the attainment date - in this case 2020. Despite this obligation, the
 29 Director has not included an additional quantitative milestone to be met beyond the
 30 attainment date. Finally, the Directors statement of quantitative milestones is too vague
 31 to meet the regulatory requirements.

32
 33 **UDAQ Response to A-28:** The commenter is correct that the first quantitative milestone
 34 for the SLC nonattainment area was December 31, 2017. The milestone report for 2017
 35 was due to EPA not later than 90 days hence. It was submitted to EPA by the Governor
 36 on March 23, 2018. EPA subsequently determined that the 2017 quantitative milestone
 37 report was adequate, and notified the Governor of such on October 24, 2018.

38
 39 The draft Serious Area SIP addresses reasonable further progress (RFP) and quantitative
 40 milestones in Chapter 8. Table 8.2 presents emissions of PM_{2.5} and PM_{2.5} precursors for
 41 2017 and 2020, identifying each as milestone years.

42
 43 UDAQ is proposing revisions to Chapter 8. These revisions are discussed in the response
 44 to **Comment A-6.**

1 **Comment Summary A-29:** WRA stated that the **fugitive emissions rule** is not BACM.
2 WRA provided specific reasons:

3 1. WRA challenges the BACM conclusion that there are no current opportunities for
4 additional program revisions that would lead to further emission reductions. WRA
5 further challenges UDAQ assessment that R307-309 is amongst the most stringent
6 rule.

7
8 2) WRA claims that California's South Coast Air Quality Management District fugitive
9 dust rule 403 (403(d)(1XA) and (d)(2)) is more stringent than R307-309 because it
10 prohibits visible dust beyond the property line of the source and requires BACM.

11
12 3) Maricopa County, Arizona prohibits visible dust beyond the property line of the
13 source. Rule 310 at 303.1(a).

14
15 4) Clark County, Nevada prohibits a dust plume that extends 100 yards or more,
16 horizontally or vertically, from the point of origin and requires best available control
17 measures. Rule 94.11.2 and 94.9.3

18
19 5) Washoe County, Nevada prohibits visible fugitive dust emissions lasting more than 5
20 minutes in any hour. Rule 040.030, Section C.

21
22 **UDAQ Response to A-29:** WRA was actually referring to the fugitive dust rule R307-
23 309. The following are responses to the comments above:

24 1. UDAQ conducted its RACM/BACM analysis by reviewing other state rules,
25 referencing the WRAP Fugitive Dust Handbook and using our engineering knowledge.
26 We evaluated every conceivable earth disturbance mechanism that would generate
27 fugitive dust and developed best management practice options for each mechanism in a
28 feasible and cost effective manner. These best management practice options were added
29 to the rule in 2013. Subsequent to this rule revision, UDAQ has received comments from
30 WRA on a number of rulemaking occasions stating that there are more control
31 mechanism are available. We have reviewed those mechanisms and have determined that
32 they are for the most part not feasible, not cost effective or more importantly, would not
33 result in advancing the airshed towards attainment.

34
35 R307-309 applies to all projects ¼ acre and greater where earth is disturbed. Only
36 Maricopa County has a more stringent applicability requirement than R307-309 because
37 it is a moderate PM10 nonattainment area. The winter time PM2.5 contribution from
38 disturbance of frozen earth is low, therefore it is not appropriate to compare the Maricopa
39 County rule or other state rules whose rules are designed to address PM10.

40
41 2) Rule 403 (d)(1)(A) does prohibit visible dust beyond the property line. Again this rule
42 is designed as a PM10 fugitive dust rule and not one to control winter time PM2.5. It is
43 inappropriate to blindly say that this or any other PM10 rule can be directly compared to
44 a winter time PM2.5 fugitive dust emission.

1 3) Maricopa County Rule 303 is designed for a moderate PM10 nonattainment area. It is
2 inappropriate to compare every facet of Rule 303 to R307-309. In this case, WRA has not
3 also stated in their comment that Rule 303 provides the option of either no visible dust
4 beyond the property boundary OR 20% opacity. R307-309 requires an opacity of 10% at
5 the property boundary.

6
7 4) Clark County is a serious PM10 nonattainment area. It is inappropriate to compare a
8 rule designed for a serious PM10 nonattainment to a winter time PM2.5 fugitive dust
9 rule.

10
11 5) Washoe County Rule 040.030, Section C applies to dust generating activities of 1 acre
12 and greater which is less stringent than R307-309's ¼ acre. Clark County, Nevada dust
13 generating prohibitions are designed for their serious PM10 nonattainment status.

14
15 WRA has not substantiated their positions quantitative evidence that their
16 recommendations would move the attainment needle forwards nor provided a cost-benefit
17 analysis. Meanwhile, UDAQ has determined that R307-309 provides a control efficiency
18 of 32% at a cost of \$2,140/acre (Area Source TSD) which has not been challenged by
19 EPA to date. The 32% is based on an annual emission when the actual control efficiency
20 for this SIP is greater due to winter ground freezing conditions.

21
22 In summary, it is important to note that it is the responsibility of EPA to make BACM
23 determinations for each specific nonattainment area which reinforces our position that
24 examples noted in WRA's comments are not necessarily BACM for the Salt Lake winter
25 time PM2.5 nonattainment area.

26
27 **Comment Summary A-30:** The Director failed to consider building codes as BACM.

28
29 **UDAQ Response to A-30:** The Utah Air Quality Board does not have authority to
30 regulate State building codes. Instead, Utah's building codes are reviewed by the
31 Uniform Building Code Commission and recommendations are made to the Utah State
32 Legislature for consideration and final adoption. The building codes that have been
33 adopted for Utah are located in the State Construction Code Administration and Adoption
34 of Approved State Construction Code Rule, UAC R156-15A, and approved codes that
35 may also be adopted by local compliance agencies are located in the State Construction
36 and Fire Codes Act, Utah Code Ann., Title 15A. Emissions reductions associated with
37 existing building codes as well as those stemming from electric and gas utility energy
38 efficiency programs are already incorporated into the SIP emissions inventory.

39
40 **Comment Summary A-31:** The Director did not consider California's more stringent
41 regulation of non-road mobile sources.

42
43 **UDAQ Response to A-31:** UDAQ agrees with the commenters that it did not mention or
44 analyze California's Nonroad Rule in the Salt Lake BACM analysis because Utah cannot
45 adopt the rule under the provisions of the Clean Air Act (CAA) as outlined below.

1
2 Nonroad engines and vehicles are regulated at the federal level through several rules as
3 outlined in the Salt Lake BACM analysis. States other than California are preempted
4 from establishing standards for nonroad engines and equipment under CAA Section
5 209(e). While states may, as allowed under CAA Section 209(e)(2)(B), adopt California
6 in-use regulations for nonroad engines and vehicles that have been authorized by EPA
7 under CAA Section 209(e)(2)(A), UDAQ concluded that Utah could not adopt such
8 standards for two key reasons. First, CAA Section 209(e)(2)(B)(i) requires the adoption
9 of standards that "... are identical, for the period concerned, to the California standards
10 authorized by the Administrator..." Second, CAA Section 209(e)(2)(B)(ii) requires that
11 states "... adopt such standards at least 2 years before commencement of the period for
12 which the standards take effect." Because several of the key California nonroad in-use
13 regulatory deadlines have already passed, Utah cannot adopt identical standards and have
14 them be technically feasible, and it did not historically adopt such standards 2 years
15 before commencement of the period for which the standards take effect.

16
17 **Comment Summary A-32:** The Director did not adequately consider California's more
18 stringent regulation of on-road mobile sources.

19
20 **UDAQ Response to A-32:** UDAQ did not include California's on-road regulations in
21 the Salt Lake BACM analysis because Utah cannot adopt the rule under the provisions of
22 the Clean Air Act (CAA) and because the California regulations are not expected to result
23 in additional emissions reductions beyond those provided by the federal Tier 3 program
24 as outlined below.

25
26 Onroad vehicles and engines are regulated at the federal level through several rules as
27 outlined in the Salt Lake BACM analysis. Examples include the EPA Tier 3 vehicle
28 standards and the EPA Emissions Standards for Heavy-duty Highway Vehicles and
29 Engines. States other than California are preempted from establishing standards for new
30 motor vehicles or new motor vehicle engines under CAA Section 209(a). While states
31 may, as allowed under CAA Section 177, adopt California emissions standards for which
32 a waiver has been granted under CAA Section 209(b)(1), UDAQ concluded that Utah
33 could not adopt such standards for model years prior to the SIP attainment date since
34 CAA Section 177 requires that states "... adopt such standards at least two years before
35 commencement of such model year..."

36
37 Even if the adoption of such standards were allowed under CAA Section 177, it should be
38 noted that EPA's Tier 3 standards were based on the California's LEV III standards and
39 include the same emissions control levels required by LEV III through 2024.

40 Furthermore, due to the fleet averaging provisions of both Tier 3 and LEV III, it is
41 unlikely that the adoption of the California ZEV program alongside either standard (Tier
42 3 or LEV III) would result in lower fleet-wide emissions levels, since each additional
43 vehicle introduced into the fleet under the ZEV program would only serve to increase the
44 number of higher-emitting vehicles allowed in the total vehicle fleet while meeting the
45 fleet-wide averaging requirement.

Comment Summary A-33: WRA believes that more public awareness should be directed towards the education of wood burning hazards.

UDAQ Response to A-33: UDAQ has partnered with UCAIR to perform public education. UCAIR spent half a million dollars in their last years wood burning and clean air campaign. This is not an insignificant amount of money which must be allocated by the Legislature.

Comment Summary A-34: WRA states that it is unclear whether the current level at which mandatory burn bans are instituted, 25 ug/m³, is as strict as necessary to qualify as BACM. San Joaquin Air Quality Management District has set its burn ban limit at 20 ug/m³ in its moderate PM_{2.5} SIP (Rule 4901.5.6.), and is considering a stricter limit for its serious PM_{2.5} SIP.

UDAQ Response to A-34: Please refer to the **Response to Comment A-23**.

Comment Summary A-35: [submitted by Western Resource Advocates et al.]: *From Section III., Specific Comments I: No near-road PM_{2.5} monitor:* Utah was required to have an operational PM_{2.5} near-road monitor in the Salt Lake NAA by January 1, 2017. EPA has explained that "When complete data from near-road PM_{2.5} ambient monitors become available, the data should be used by states and the EPA for all aspects of the NAAQS implementation process, from attainment planning to the determination of attainment." (81 Fed. Reg. at 58138). Had Utah followed the law, its near road PM_{2.5} monitor would have had the requisite three years of data as of December 2019. Without an operational monitor, Utah cannot show attainment. The Air Quality Board should demand that Director install the required monitor, and the possible determination that the Salt Lake NAA has attained the PM_{2.5} standard must be suspended until Utah can show that the standard is being met at a near road monitor.

UDAQ Response to A-35: 40 CFR Part 58 Appendix D 4.7.1(b)(2) requires that, for a Core Based Statistical Area with a population of 1,000,000 or more persons, at least one PM_{2.5} monitor is to be collocated at a near-road NO₂ station. The commenter is correct that such monitor was to be in place on Jan 1, 2017, and had this been the case would likely have collected a full 3-year data set by the attainment date of December 31, 2019.

EPA will be obligated to determine whether the SLC nonattainment area has or has not attained the NAAQS at that time. The Near-Road monitor will become operational on Jan 1, 2019, as per a schedule agreed upon by UDAQ and EPA.

Comment Summary A-36 [submitted by Western Resource Advocates et al.]: *From Section III., Specific Comments J: U.S. Magnesium:* The draft SIP notes that "Both hydrochloric acid (HCl) and aerosol chloride play an important role in PM_{2.5} formation." and that "[m]easured HCl is also underestimated by the model, particularly in the vicinity

1 of US Magnesium, where values as high as 100 ppb were observed during the 2017
2 UWFPS."

3
4 In addition UPA's comment presents a weight-of-evidence analysis that clearly identifies
5 ammonium chloride as a significant contributor to PM_{2.5} concentrations in the SLC
6 Nonattainment Area, and indicates that "US Magnesium Corporation is the single
7 culpable source."

8
9 These findings establish that the Director must consider applying additional controls or
10 undertaking better enforcement of HCl emissions at U.S. Magnesium. "[a] state has
11 discretion to require reductions from any source inside or outside of a PM_{2.5}
12 nonattainment area (but within the state's boundaries) in order to fulfill its obligation to
13 demonstrate attainment in a PM_{2.5} nonattainment area as expeditiously as
14 practicable[.]" 81 Fed. Reg. at 58080.

15
16 Because further controls on US Magnesium will reduce ammonium chloride and PM_{2.5} in
17 Salt Lake City and could be a key to attaining the PM_{2.5} NAAQS, the Air Quality Board
18 should ask the Director to consider and implement effective and appropriate measures to
19 reduce US Magnesium emissions and better enforcement of existing controls.

20
21 **UDAQ Response to A-36:** UDAQ acknowledges that the Implementation Rule provides
22 authority and direction to control emissions from sources located outside the NAA (but
23 within the state) if necessary to provide for attainment by the attainment date. This
24 authority also extends to PM_{2.5} plan precursors (those precursors required to be regulated
25 in the applicable attainment plan and/or the NNSR program).

26
27 Nevertheless, the applicable attainment plan already demonstrates attainment of the
28 standard by the attainment date. Therefore it is not necessary to extend control beyond
29 the boundary of the nonattainment area.

30
31 UDAQ remains interested in pursuing some of the questions raised by the Wintertime
32 Fine Particulate Study. Among these questions is the attribution of ammonium chloride
33 from U.S. Magnesium. However, it is not compelled by rule to include U.S. Magnesium
34 in the SIP at this time. **See also Response to Comment A-24.**

35
36 **Comment Summary A-37:** Only air agencies may submit a precursor demonstration. In
37 addition, a public comment period must be granted for a precursor demonstration.

38
39 **UDAQ Response to A-37:** UDAQ agrees that if Utah elected to submit to the EPA one
40 or more precursor demonstrations for the SL NAA, the EPA would be compelled to
41 review and act upon the submittal. UDAQ also agrees that if a precursor demonstration
42 were submitted by the State to the EPA, the demonstration would be subject to public
43 review and comment.

44
45 **Comment Summary A-38:** UPA's claim that major source precursor emissions do not
46 contribute significantly is wholly dependent on a threshold concentration, despite that it

1 fails to address the particular circumstances of the Salt Lake NAA, that EPA has rejected
2 the notion of any bright line threshold, and that it is based on the 2018 Technical Basis
3 Document that is not relevant to precursor demonstrations and EPA draft guidance that
4 the agency refers to as recommendations and guidelines.
5

6 **UDAQ Response to A-38:** The Draft PM2.5 Precursor Demonstration Guidance was
7 released for public comment on November 17, 2016. There is no final guidance published
8 to date. The recommended significance threshold in the draft guidance is 1.3 ug/m3 and
9 the UPA precursor demonstration used a significance threshold of 1.5 ug/m3. However,
10 the guidance also states “under the PM2.5 SIP Requirements Rule, the significance of a
11 precursor’s contribution is to be determined based on the facts and circumstances of the
12 area”. UDAQ supports using the best guidance available. **See also Responses to**
13 **Comments A-3, comment #4, and A-16.**
14

15 **Comment Summary A-39:** UPA is wrong to suggest that its modeling exercise compels
16 any particular action. UPA’s modeling can do nothing more than purport to estimate the
17 contribution that precursor emissions from major sources have on the Salt Lake NAA, it
18 does not establish that these contributions are insignificant. The UPA modeling serves
19 only to estimate contributions and does not compel either the AQB or the Division to do
20 anything other than consider what the trade group has put forward. UDAQ has the
21 discretion to represent to the AQB that BACT must be imposed for all precursor
22 emissions and the appropriate course of action for the AQB is to ensure that UDAQ
23 imposes BACT on the Salt Lake NAA major sources.
24

25 **UDAQ Response to A-39:** UDAQ acknowledges the effort UPA put into their precursor
26 demonstration based on the available draft guidance. If the State were to submit a
27 precursor demonstration to EPA with AQB approval, it would be based on UDAQ’s own
28 work and modeling.
29

30 **Comment Summary A-40:** The UPA submission conflicts with the proposed Salt Lake
31 NAA Serious SIP. It is contrary to the Division's position articulated in their Draft
32 Serious SIP. Because UPA's prediction of precursor contribution has no persuasive power
33 in light of the Division's findings and analysis, it should be rejected.
34

35 **UDAQ Response to A-40:** The UDAQ is not electing to submit a major stationary
36 source precursor demonstration at this time.
37

38 **Comment Summary A-41:** A precursor demonstration could not be submitted to EPA
39 unless the Serious SIP and BACT review were radically rewritten and the public given
40 the opportunity to comment on this fundamental change in the Utah's strategy for
41 bringing the Salt Lake NAA into compliance with the PM2.5 NAAQS.
42

UDAQ Response to A-41: The UDAQ is not electing to submit a major stationary source precursor demonstration at this time. Therefore Part A and Part H do not need to be rewritten or opened for public comment again.

Comment Summary A-42: A Division precursor demonstration could not withstand review. The Division has consistently maintained a position that is antithetical to the position put forth by UPA. For the Division to suddenly flip its position relative to these determinations and to contend that its uncertain model could show that precursors from major sources do not significantly contribute to PM_{2.5} concentrations would necessarily be arbitrary and capricious and could not withstand scrutiny.

UDAQ Response to A-42: The UDAQ is not electing to submit a major stationary source precursor demonstration at this time.

Comment Summary A-43: UPA modeling fails to reject the aggregate impact of precursor emissions from major sources in the Salt Lake NAA.

UDAQ Response to A-43: EPA's draft guidance is silent on the aggregation of impacts from two or more precursor demonstrations. However, the PM_{2.5} Implementation Rule does emphasize that significance is to be determined based on the "*facts and circumstances of the area*". UDAQ performed its own analysis, and therein did evaluate aggregate impacts. For more discussion thereof, see **Response to Comment A-16**.

Comments from individual citizens

Comment Summary A-44: UDAQ received a number of **comments from individual citizens**. These comments fell into four categories: 1) outside of DAQ's regulatory authority, 2) within DAQ's regulatory authority and were addressed through BACM analysis with this SIP, 3) general comments on the state of Utah's air quality that did not contain addressable content, and 4) comments that UDAQ addresses through grant programs.

Comment summary of comments that fall outside of DAQ's regulatory authority: add trax/frontrunner instead of expanding roads and highways, tax incentives for telecommuting, no new permits for commercial entities, ensure citizen's snowblowers and lawnmowers are properly maintained, incentivize green energy, less expensive public transportation (possibly by increasing taxes), ban idling, no mining on windy days, all vehicles tier III, inland port zero carbon, no gravel pit expansion, no draining Utah Basin aquifers, increase gas tax, institute carbon tax, encourage telecommuting on red air days, UTA free in winter months and/or on red air days, tougher emissions standards for diesel trucks (particularly coal rolling), heavy duty diesel emissions program, use lower NO_x fuels, improve emissions testing for all of Utah, stop burning fields, reduce dust pollution, ban fireworks, no coal burning for heat, incentivize carpooling, idling education, reduce fertilization and food waste, require state employees to telecommute

1 when possible, regulate industrial vehicles, Kennecott could have a voluntary clean
2 cessation of activities during inversions, subsidize low income to improve insulation and
3 heating, air quality education for Traeger grill owners, ban 2-cycle yard equipment in
4 Utah, and require local refineries to meet 10ppm sulfur standard.
5

6 **Comment Response:** While many of these comments may help improve Utah's air
7 quality, they are not within UDAQ's ability to regulate. Many of these comments would
8 require a state or federal legislative action. Some of the comments are controlled by State
9 and local agencies other than UDEQ.

10
11 *Comments that UDAQ addresses through grant programs, but not through this SIP:*

12
13 **Comment:** Incentivize EV

14 **Response:** UDAQ has administered a few programs over the years with funding provided
15 by the legislature that incentivize clean fuels, including EV. In addition, UDAQ is
16 allocating approximately 3.8 million of the Volkswagen settlement for light duty electric
17 vehicle charging infrastructure.
18

19 **Comment:** Promote electric yard equipment

20 **Response:** UDAQ and partners held a snowblower exchange this fall and will be holding
21 a lawnmower exchange next spring. UDAQ will continue these exchange programs as
22 long as there is funding available.
23

24 **Comment:** Assist wood heating to gas change out

25 **Response:** UDEQ is currently administering a \$3 million dollar grant from the EPA to
26 convert wood heating to natural gas in the Salt Lake NAA.
27

28 *Comment summary on comments that have been addressed through the SIP process:*

29 Regulate industry and refineries, do what CA has done, no wood burning, enforcement
30 for burning on no-burn days, increase monitoring locations, and there should not be any
31 exemptions on flare gas recovery.
32

33 **Response:** These comments were addressed through this SIP. The SIP process requires
34 both stationary point sources (large refineries and industry) and area sources (residences,
35 businesses, small industry) to implement the best available control measure (BACM) to
36 control emissions. Part of the BACM analysis is reviewing what other nonattainment
37 areas in the U.S. have implemented. BACM includes new or amended rules to address
38 both point and area sources, including everything from specific controls on refineries to
39 wood burning rules. In regards to monitoring locations, UDEQ meets monitoring
40 requirements set by the EPA.
41
42

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ATTACHMENT C

1 Draft UDAQ Major Stationary Source
2 Precursor Demonstration for the Salt
3 Lake City 24-hour PM_{2.5} Serious non-
4 attainment Area

5
6 Utah Division of Air Quality

7

8

9

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15

16

1.0 Introduction

The Utah Division of Air Quality (UDAQ) seeks to find the most beneficial impacts to air quality, while minimizing the economic burden for stakeholders. When considering new emissions control requirements, it is important to not only consider the environmental benefit, but also the associated cost. For major stationary sources, the cost of implementing new emissions controls can be particularly high.

Due to the nonlinear nature of air chemistry along with the Salt Lake Valley's unique geography, a photochemical model is needed to assess wintertime PM_{2.5} pollution impacts from gaseous emissions. UDAQ conducted precursor demonstrations using photochemical modeling to quantify the air quality impacts from NO_x, SO_x, VOC, and NH₃ emissions due to major stationary source operations in the Salt Lake City (SLC) non-attainment area.

2.0 Modeling Framework

In conducting the precursor demonstrations presented in this document, UDAQ used the same CAMx 6.30 modeling framework used in their Serious SLC PM_{2.5} modeled attainment demonstration. Details relating to CAMx setup/parameterization, emissions inventory development, and meteorological modeling can be found in the Technical Support Documentation (TSD) that accompanies the State implementation Plan (SIP).

UDAQ used the 2019 emissions inventory (EI) developed for the SLC non-attainment area PM_{2.5} SIP, with one notable exception: For the precursor demonstrations presented in this document, the large haul trucks at the Kennecott Utah Copper (KUC) Bingham Canyon Mine were processed as non-road mobile source emissions, instead of treating them as part of the major stationary source inventory.

UDAQ used meteorological model (WRF-ARW version 3.7) output from their Serious PM_{2.5} SIP modeled attainment demonstration. The modeled meteorological episode is a 10-day persistent cold-pool event, spanning January 1 - January 11, 2011. The WRF-ARW model generally performed well. The cold-pool evolution and vertical thermal structure were well simulated, enabling UDAQ to model the high PM_{2.5} concentrations observed in the Salt Lake Valley during this period.

3.0 Major Stationary Sources Precursor Demonstrations

For the precursor demonstrations presented here, UDAQ examined the change in modeled PM_{2.5} due to eliminating different permutations of gas precursor emissions from the 2019 Salt Lake City non-attainment major stationary sources inventory. Five different precursor demonstrations were created by completely removing emissions of:

- 1) NO_x
- 2) SO_x
- 3) VOC
- 4) NH₃
- 5) all four gas precursors: NO_x, SO_x, VOC, and NH₃

Only emissions from SLC non-attainment area major stationary sources were removed. Essentially, a precursor demonstration entails calculating the change (or difference) in modeled 24-hour PM_{2.5} due to the precursor(s) being eliminated in a particular scenario.

If modeled PM_{2.5} differences between the 2019 SIP scenario and emissions reduction scenario were greater than 1.5 µg/m³, then these differences were considered “significant”. This threshold of 1.5 µg/m³ is provided in a recent update to the “Technical Basis Document” that underlies draft Precursor Demonstration guidance currently under EPA review.

Figure 3.0.1, below, shows modeled 24-hour PM_{2.5} results for the wintertime episode used in UDAQ’s modeled attainment test for the Serious SLC non-attainment SIP. The meteorological episode spans from January 1 - 10, 2011. The precursor demonstrations use the 2019 EI that was used in Utah’s Serious SLC non-attainment area SIP, with one notable exception: As noted above, the emissions from large haul KUC mining trucks were removed from the major stationary source (i.e., point) category. Instead, KUC mining truck emissions were added to the non-road mobile sector. Several figures in this document highlight results for the the 7th day (January 7) of the episode, since the largest PM_{2.5} concentrations were modeled on this day (see Figure 3.0.1).

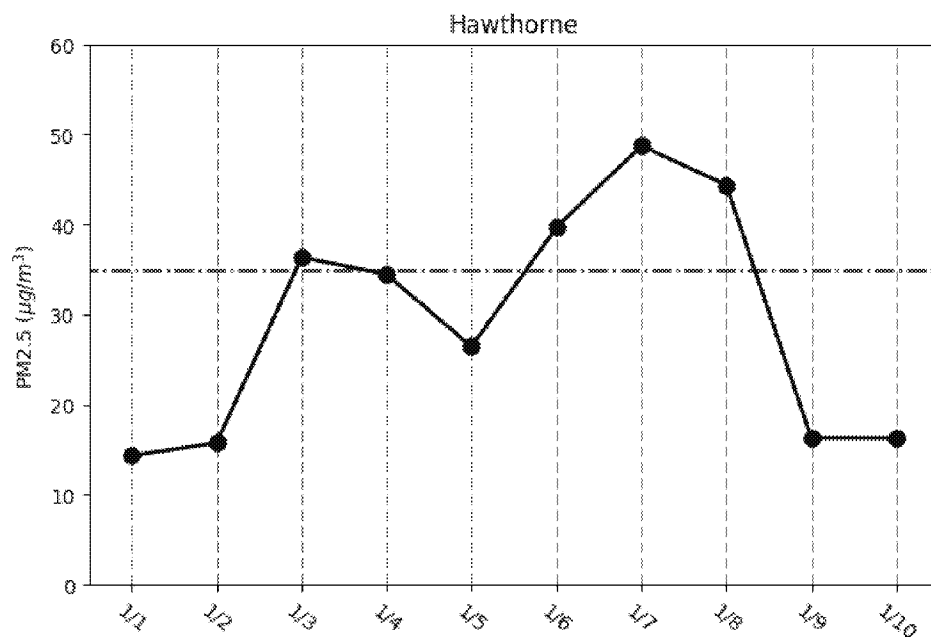


Figure 3.0.1: Plot of modeled 24-hour PM_{2.5} at Hawthorne (Salt Lake City) using 2019 emissions inventory for January 1-10, 2011 meteorological episode. Red dashed

line indicates the National Ambient Air Quality Standard (NAAQS) for daily $\text{PM}_{2.5}$ ($35 \mu\text{g}/\text{m}^3$).

The precursor demonstrations UDAQ conducted evaluate changes in modeled $\text{PM}_{2.5}$ at SLC non-attainment area monitors. Figure 3.0.2, below, shows the locations of $\text{PM}_{2.5}$ FRM monitors in the SLC non-attainment area. The highest modeled $\text{PM}_{2.5}$ occurred at the Hawthorne monitor, near downtown Salt Lake City. UDAQ will also present results across the entire non-attainment area on January 7, when the largest changes in modeled $\text{PM}_{2.5}$ generally occurred.



Figure 3.0.2: Detail of northern Utah. The Salt Lake City (SLC) non-attainment area is depicted by orange overlay. $\text{PM}_{2.5}$ FRM monitor locations are shown by dots in the map. Green dots represent currently active $\text{PM}_{2.5}$ monitors. Red dots indicate monitors no longer in operation.

3.1 Precursor Demonstration for NO_x

Removing major stationary source NO_x emissions produced changes in modeled $\text{PM}_{2.5}$ less than $1.5 \mu\text{g}/\text{m}^3$ at all monitors during the length of the episode. However, model

results revealed a NO_x disbenefit effect at some monitor locations. A NO_x disbenefit occurs in NO_x-saturated environments where the more frequent conversion of NO to NO₂ suppresses the oxidation of NO₂ to particulate nitrate (NO₃). By reducing NO_x in this kind of environment, PM_{2.5} concentrations can actually increase. Although counterintuitive, a NO_x disbenefit can occur in physical reality. These NO_x disbenefit effects are indicated by negative values shown below in Table 3.1.1. Negative changes in PM_{2.5} make it difficult to interpret the air quality impacts from major stationary sources. For this reason, UDAQ also conducted supplemental source apportionment modeling to estimate the contribution of major stationary sources to particulate nitrate (NO₃) formation (see section 4.0).

2019 base case - 2019 NO _x control case	Change in PM _{2.5} (ug/m ³)									
	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman	0.00	0.00	0.05	0.24	0.02	0.01	0.01	0.15	0.07	0.04
Tooele	0.00	0.02	0.18	0.27	0.03	0.12	0.28	0.33	0.04	0.02
Cottonwood	0.01	0.01	0.16	0.33	0.04	-0.11	-0.37	0.00	0.17	0.07
Erda	0.00	0.03	0.43	0.30	0.06	0.18	0.53	0.49	0.02	0.04
Hawthorne	0.01	-0.01	0.15	0.39	0.04	-0.16	-0.53	0.07	0.15	0.07
Magna	0.00	0.05	0.44	0.48	0.14	0.12	0.47	0.25	0.07	0.10
Rose Park	0.01	0.03	0.47	0.43	0.03	-0.28	0.17	0.25	0.18	0.08
Bountiful Viewmont	0.02	0.04	0.34	0.70	-0.16	-1.58	0.12	0.60	0.13	0.18
Ogden	0.03	0.04	0.22	0.52	0.21	0.23	0.82	0.61	0.11	0.16
Harrisville	0.04	0.09	0.13	0.45	0.21	0.64	0.79	0.65	0.06	0.11
Brigham City	0.27	0.23	0.21	0.45	0.33	0.98	1.20	0.96	0.05	0.23

Table 3.1.1: Change in modeled 24-hour PM_{2.5} due to eliminating all NO_x emissions from major stationary sources in the 2019 Serious PM_{2.5} SLC non-attainment area EI. Each row represents results at a specific SLC non-attainment area monitor. Each column represents one day in a 10-day modeled wintertime episode (starting with January 1).

It should be noted that monitors correlated with negative changes in PM_{2.5} were located in north Salt Lake County and south Davis County. The recent 2017 Utah Wintertime Fine Particulate Study (UWFPS) report¹ suggests that the environment in northern Salt Lake County is uniquely NO_x-rich relative to other regions of the Wasatch Front and Cache Valley. However, it is not completely clear if the model has been parameterized well enough to accurately portray the relationship between NO_x and key oxidants (e.g., O₃ and N₂O₅) in the region. Figure 3.1.1, below, shows that the largest negative change in PM_{2.5} occurred in the north Salt Lake County region. When looking at the entire spatial field (1.3 km CAMx modeling domain), changes in nitrate (NO₃) exceeding 1.5 µg/m³ may be seen in a broad area north of the Brigham City monitor in Box Elder County (Figure 3.1.1 panel b). Therefore, significant (positive) changes in PM_{2.5} also occurred in the non-attainment area.

¹ <https://deq.utah.gov/air-quality/utah-winter-fine-particulate-study-uwfps>

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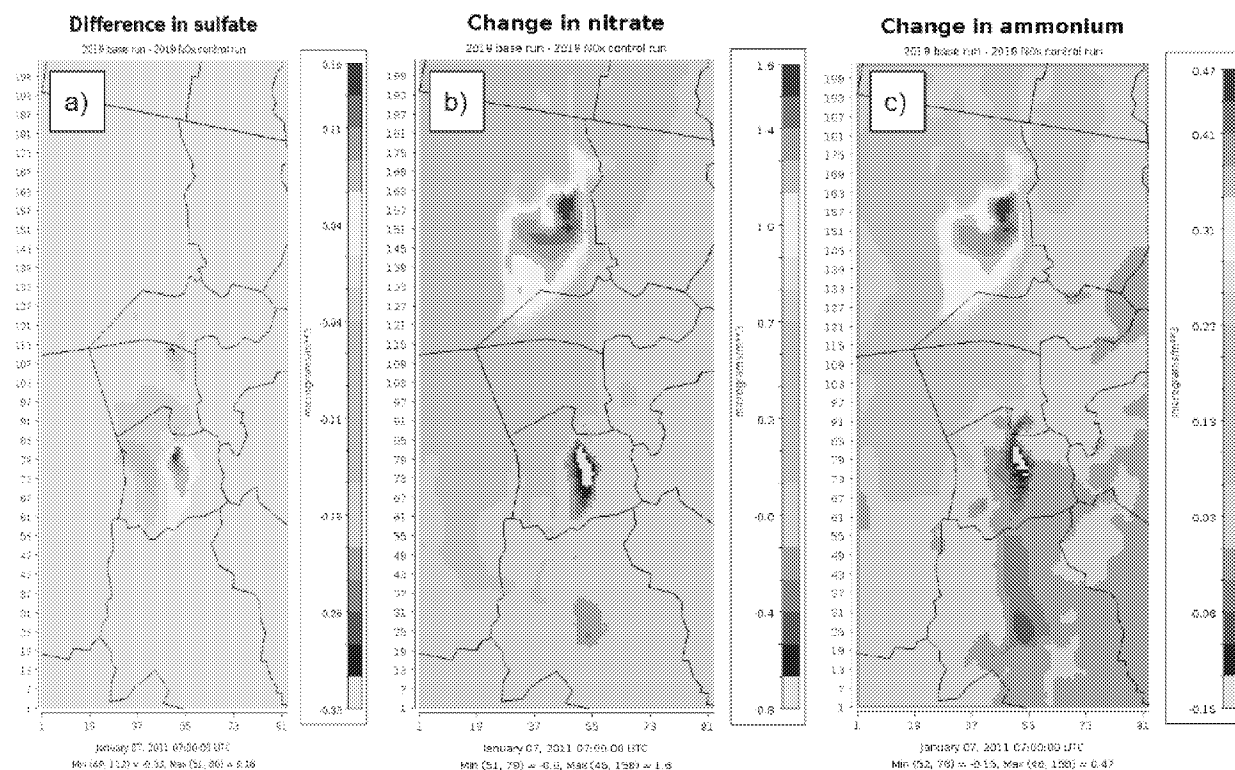


Figure 3.1.1: Changes in modeled 24-hour PM_{2.5} species (a-sulfate, b-nitrate, c-ammonium) due to eliminating NO_x emissions from major stationary sources.

Using 2011 ambient 24-hour PM_{2.5} FRM data that coincides with the modeled episode, UDAQ attempted to correct model biases by scaling (absolute) changes in PM_{2.5} by the ratio of monitored PM_{2.5} over modeled (full 2019 EI) PM_{2.5}. Unfortunately, PM_{2.5} monitor data was not available for all days and monitors; this is reflected by the blank values in the cells of Table 3.1.2, below. After correcting for model bias, results indicated a significant change in PM_{2.5} at the Ogden monitor on January 7.

2019 base case - 2019 NO _x control case	Change in PM _{2.5} measured (ug/m ³)									
	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman			0.23			0.15			0.05	
Tooele										
Cottonwood	0.01	0.02	0.18	0.53	0.08	-0.17	-0.47	0.00	0.31	0.08
Erda										
Hawthorne	0.01	-0.01	0.13	0.58	0.07	-0.23	-0.72	0.11	0.24	0.06
Magna			0.60			0.21			0.13	
Rose Park	0.01	0.06	0.44							0.09
Bountiful Viewmont			0.27			-1.86			0.21	
Ogden			0.32	0.68	0.37	0.31	1.54	1.01	0.24	0.12
Harrisville				0.86		1.24			0.23	
Brigham City			0.21			1.50			0.19	

Table 3.1.2: Bias-corrected change in modeled 24-hour PM_{2.5} due to eliminating NO_x emissions from major stationary sources. Monitor Data was not available for every site and day, as noted by blank cells. Changes in PM_{2.5} greater than 1.5 µg/m³ are highlighted in red.

3.2 Precursor Demonstration for SO_x

Generally larger values of PM_{2.5} changes due to SO_x are expected due to the the relatively large contribution of SO_x (roughly 79%) from major stationary source emissions. Looking at Table 3.2.1, below, most monitors did not show a significant impact from major source SO_x reductions. However, the change in modeled PM_{2.5} at the magna monitor was significant (1.91 µg/m³) on January 7.

2019 base case - 2019 SO _x control case	Change in PM _{2.5} (ug/m ³)									
	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman	0.00	0.00	0.19	0.15	0.02	0.01	0.35	0.19	0.50	0.09
Tooele	0.00	0.01	0.24	0.42	0.05	0.36	0.67	0.62	0.10	0.04
Cottonwood	0.01	0.03	0.50	0.75	0.06	0.09	0.56	0.16	0.27	0.14
Erda	0.00	0.03	0.16	0.33	0.08	0.22	1.08	1.02	0.03	0.07
Hawthorne	0.01	0.05	0.64	0.88	0.07	0.17	0.93	0.25	0.22	0.15
Magna	0.00	0.00	0.10	1.13	0.15	0.35	1.81	1.40	0.30	0.56
Rose Park	0.01	0.00	0.65	0.93	0.06	0.11	0.75	0.39	0.17	0.16
Bountiful Viewmont	0.01	0.01	1.48	0.90	0.59	0.79	0.55	0.57	0.22	0.19
Ogden	0.01	0.01	0.10	0.55	0.28	0.56	0.67	0.57	0.10	0.10
Harrisville	0.02	0.02	0.07	0.32	0.19	0.27	0.51	0.47	0.10	0.16
Brigham City	0.03	0.03	0.06	0.15	0.26	0.32	0.50	0.54	0.04	0.16

Table 3.2.1: Change in modeled 24-hour PM_{2.5} due to eliminating SO_x emissions from major stationary sources in the 2019 Serious PM_{2.5} SLC non-attainment area EI. Each row represents results at a specific SLC non-attainment area monitor. Each column represents one day in the modeled 10-day wintertime episode, starting on January 1. Significant changes in modeled PM_{2.5} are highlighted in red.

When we consider SLC non-attainment area as whole, analysis showed a maximum change in PM_{2.5} of 5.9 µg/m³ in western Salt Lake County (Figure 3.2.1, below).

1 Localized changes in modeled $\text{PM}_{2.5}$ greater than $1.5 \mu\text{g}/\text{m}^3$ were also observed in Weber
 2 County and Box Elder County.

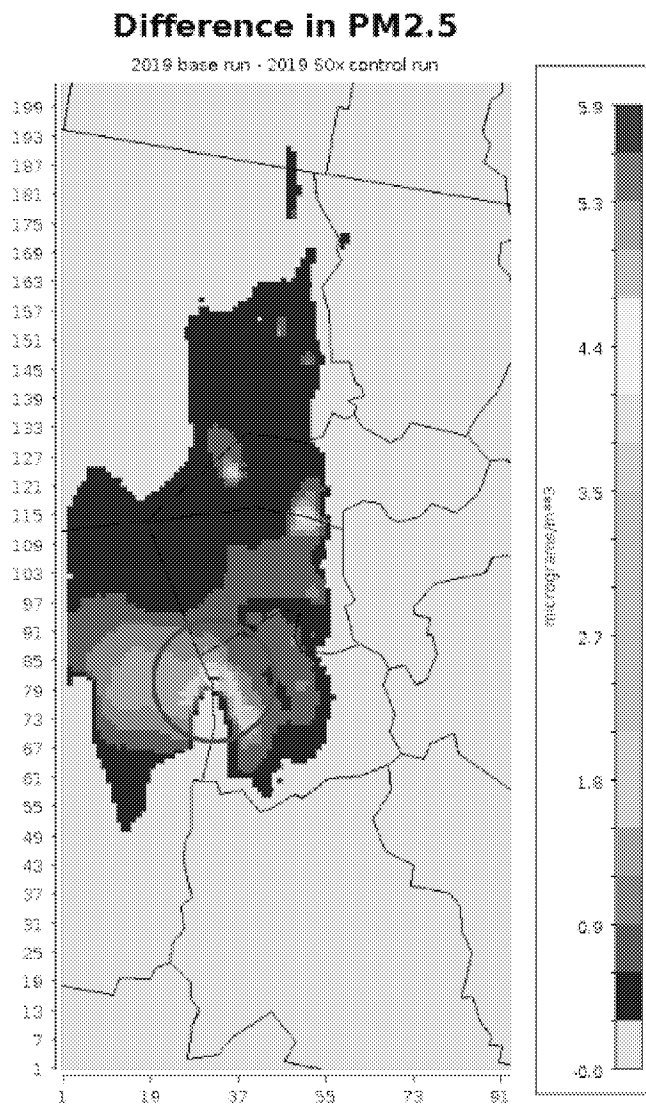


Figure 3.2.1: Change in modeled 24-hour $\text{PM}_{2.5}$ due to eliminating all SO_x emissions from major stationary sources in the SLC non-attainment area EI. The largest change in modeled $\text{PM}_{2.5}$ ($5.9 \mu\text{g}/\text{m}^3$) was observed in western Salt Lake County (purple circle).

After correcting for model bias, there were no changes in $\text{PM}_{2.5}$ greater than $1.5 \mu\text{g}/\text{m}^3$ at monitor locations (Table 3.2.2, below). However, there were no available $\text{PM}_{2.5}$ records at Magna on January 7, when simulated $\text{PM}_{2.5}$ concentrations were highest.

2019 base case - 2019	Change in PM _{2.5} measured (ug/m ³)									
SO _x control case	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman										
Tooele			0.31			0.46			0.11	
Cottonwood	0.01	0.06	0.68	1.18	0.13	0.14	0.73	0.28	0.48	0.17
Erda										
Hawthorne	0.01	0.07	0.57	1.45	0.13	0.24	1.24	0.38	0.34	0.13
Magna			0.14			0.61			0.53	
Rose Park	0.01	0.01	0.61							0.20
Bountiful Viewmont			1.16			0.93			0.35	
Ogden			0.15	0.77	0.90	0.75	1.25	0.94	0.71	0.15
Harrisville				0.61		0.52			0.38	
Brigham City			0.08			0.50			0.15	

Table 3.2.2: Bias-corrected change in modeled 24-hour PM_{2.5} due to eliminating SO_x emissions from major stationary sources. Monitor Data was not available for every site and day, as noted by blank cells.

3.3 Precursor Demonstration for VOC

Changes in modeled PM_{2.5} due to eliminating major source VOC emissions were less than significant at all monitors during the episode (Table 3.3.1, below). The largest change was only 0.61 µg/m³, which was produced at the Bountiful Viewmont monitor on January 6.

2019 base case - 2019	Change in PM _{2.5} (ug/m ³)									
VOC control case	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman	0.00	0.00	0.04	0.02	0.00	0.01	0.21	0.07	0.01	0.00
Tooele	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.01	0.00	0.00
Cottonwood	0.00	0.01	0.09	0.12	0.01	0.12	0.47	0.21	0.01	0.00
Erda	0.00	0.00	0.03	0.00	0.00	0.02	0.02	0.02	0.00	0.00
Hawthorne	0.00	0.03	0.18	0.14	0.01	0.19	0.52	0.24	0.01	0.00
Magna	0.00	0.02	0.06	0.02	0.04	0.07	0.14	0.18	0.00	0.02
Rose Park	0.00	0.04	0.16	0.14	0.02	0.25	0.25	0.17	0.02	0.00
Bountiful Viewmont	0.02	0.12	0.23	0.17	0.21	0.61	0.27	0.21	0.07	0.03
Ogden	0.02	0.04	0.06	0.11	0.18	0.29	0.14	0.09	0.04	0.04
Harrisville	0.01	0.03	0.04	0.07	0.06	0.19	0.18	0.06	0.04	0.03
Brigham City	0.02	0.03	0.02	0.03	0.07	0.15	0.12	0.04	0.01	0.02

Table 3.3.1: Change in modeled 24-hour PM_{2.5} due to eliminating VOC emissions from major stationary sources in the 2019 Serious PM_{2.5} SLC non-attainment area EI. Each row represents results at a specific SLC non-attainment area monitor. Each column represents one day in the modeled 10-day wintertime episode, starting on January 1.

Not only were changes in 24-hour modeled PM_{2.5} less than 1.5 µg/m³ at all monitors, changes were less than significant throughout the entire SLC non-attainment area (Figure 3.3.1, below). However, it is worth noting that changes in modeled PM_{2.5} along the eastern Salt Lake County mountain range were near 1.2 µg/m³; a threshold of significance provided in older EPA Prevention of Significant Deterioration (PSD) guidance.

1

Changes in PM_{2.5}

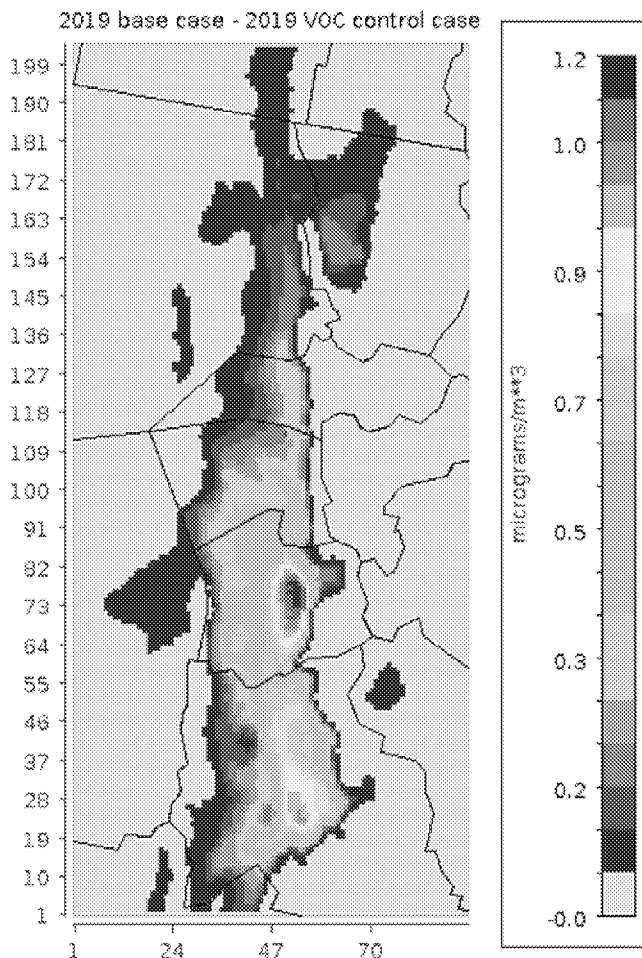


Figure 3.3.1: Change in modeled 24-hour PM_{2.5} due to eliminating VOC emissions from SLC non-attainment area major sources.

3.4 Precursor Demonstration for NH₃

Major stationary source ammonia (NH₃) comprises only 3% of the 2019 SLC non-attainment area emissions inventory. Not surprisingly, removing major source NH₃ resulted in less than significant changes in modeled PM_{2.5} at all monitors (Table 3.4.1, below).

The role of ammonia injection in the modeling should be noted. A significant amount (~40%) of ammonia emissions were added to the 2019 SIP modeling in order to improve ammonium nitrate performance. Injected ammonia was processed as a part of the small stationary sources inventory (i.e., non-point). The need to add so much non-inventoried ammonia means that the 2019 ammonia EI is possibly not that representative of reality. Therefore, there are large uncertainties concerning Utah ammonia emissions. Parts of northern Salt Lake County may even be ammonia-limited at times due to the large

abundance of NO_x emissions in the area (2017 UWFPS). A large UDAQ-funded scientific study is planned for 2019 - 2020. The goal of the scientific study is to discover ammonia sources along the Wasatch Front and ultimately improve Utah's ammonia emissions inventory.

2019 base case - 2019 NH3 control	Change in PM2.5 (ug/m3)									
	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Herriman	0.00	0.00	0.01	0.03	0.00	0.00	0.32	0.10	0.02	0.00
Tooele	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.02	0.00	0.00
Cottonwood	0.00	0.00	0.01	0.07	0.00	0.01	0.58	0.29	0.01	0.00
Erda	0.00	0.00	0.01	0.00	0.00	0.02	0.02	0.04	0.00	0.00
Hawthorne	0.00	0.00	0.02	0.08	0.00	0.01	0.62	0.38	0.01	0.00
Magna	0.00	0.00	0.02	0.03	0.00	0.02	0.48	1.00	0.00	0.03
Rose Park	0.00	0.00	0.04	0.13	0.00	0.01	0.37	0.50	0.01	0.00
Bountiful Viewmont	0.00	0.00	0.02	0.16	0.00	0.01	0.12	0.51	0.02	0.00
Ogden	0.00	0.00	0.00	0.02	0.01	0.02	0.02	0.20	0.00	0.00
Harrisville	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.14	0.00	0.00
Brigham City	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.04	0.00	0.00

Table 3.4.1: Change in modeled 24-hour PM_{2.5} due to eliminating NH3 emissions from major stationary sources in the 2019 Serious PM_{2.5} SLC non-attainment area EI. Each row represents results at a specific SLC non-attainment area monitor. Each column represents one day in the modeled 10-day wintertime episode, starting on January 1.

Examining the entire non-attainment in Figure 3.4.1, below, a significant localized change in modeled PM_{2.5} due to major source ammonia was produced in western Salt Lake County. Interestingly, this is near the location where a significant change in modeled PM_{2.5} due to SO_x reductions was calculated (Figure 3.2.1).

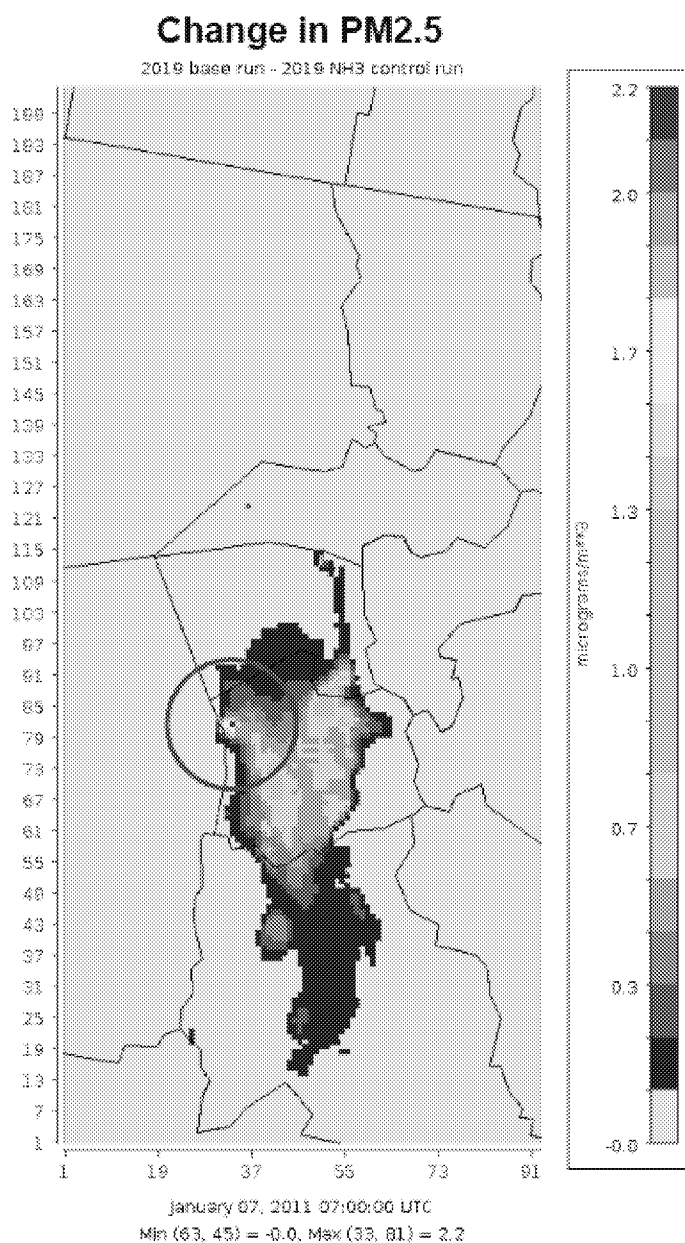


Figure 3.4.1: Change in modeled 24-hour PM_{2.5} due to eliminating all NH₃ emissions from major stationary sources in the SLC non-attainment area EI. Changes in PM_{2.5} greater than 1.5 µg/m³ were observed in western SLC County (noted by purple circle).

3.5 Precursor Demonstration for NO_x, SO_x, VOC, and NH₃

UDAQ conducted a supplemental precursor demonstration where SLC non-attainment area major stationary source NO_x, SO_x, VOC, and NH₃ emissions were jointly removed. As in prior analyses, the change in modeled 24-hour PM_{2.5} was calculated and tested for

significance against a threshold of 1.5 $\mu\text{g}/\text{m}^3$. The analysis produced significant differences in $\text{PM}_{2.5}$ at several monitors for multiple days (see Table 3.5.1, below).

2019 base case - 2019 all gas control case	Change in $\text{PM}_{2.5}$ ($\mu\text{g}/\text{m}^3$)									
	2011001	2011002	2011003	2011004	2011005	2011006	2011007	2011008	2011009	2011010
Henniman	0.00	0.00	0.28	0.62	0.03	0.04	0.80	0.49	0.58	0.13
Tooele	0.00	0.03	0.44	0.70	0.06	0.50	0.98	0.99	0.14	0.06
Cottonwood	0.01	0.05	0.86	1.26	0.11	0.11	1.11	0.64	0.45	0.21
Erda	0.00	0.04	0.61	0.63	0.15	0.44	1.65	1.56	0.05	0.11
Hawthorne	0.02	0.08	0.98	1.59	0.12	0.22	1.22	0.90	0.38	0.22
Magna	0.01	0.07	0.62	1.66	0.33	0.55	2.75	2.39	0.37	0.68
Rose Park	0.02	0.08	1.29	1.59	0.12	0.22	1.49	1.27	0.38	0.24
Bountiful Viewmont	0.05	0.17	2.05	1.86	0.65	-0.11	1.07	1.84	0.42	0.39
Ogden	0.06	0.08	0.38	1.20	0.68	1.12	1.65	1.47	0.25	0.40
Harrisville	0.06	0.14	0.24	0.85	0.47	1.11	1.49	1.32	0.20	0.29
Brigham City	0.33	0.29	0.31	0.66	0.65	1.46	1.81	1.57	0.10	0.41

Table 3.5.1: Change in modeled 24-hour $\text{PM}_{2.5}$ due to eliminating NO_x , SO_x , VOC, and NH_3 emissions from major stationary sources in the 2019 Serious $\text{PM}_{2.5}$ SLC non-attainment area EI. Each row represents results at a specific SLC non-attainment area monitor. Each column represents one day in the modeled 10-day wintertime episode, starting on January 1. Significant changes in modeled $\text{PM}_{2.5}$ are highlighted in red.

Below, Figure 3.5.1 shows 24-hour modeled $\text{PM}_{2.5}$ changes in the SLC non-attainment area for January 7. Beyond monitor locations, the largest change ($6.7 \mu\text{g}/\text{m}^3$) in modeled 24-hour $\text{PM}_{2.5}$ was seen in western Salt Lake County; which correlates with the large SO_x impact discussed in section 3.2 (Figure 3.2.1). Large localized changes in modeled $\text{PM}_{2.5}$ appeared in Davis County, with one spot near the Davis County border; This is consistent with the prior NO_x precursor demonstration discussed in section 3.1 (Figure 3.1.1). Eastern Box Elder County shows a broad impact from SLC non-attainment major stationary sources.

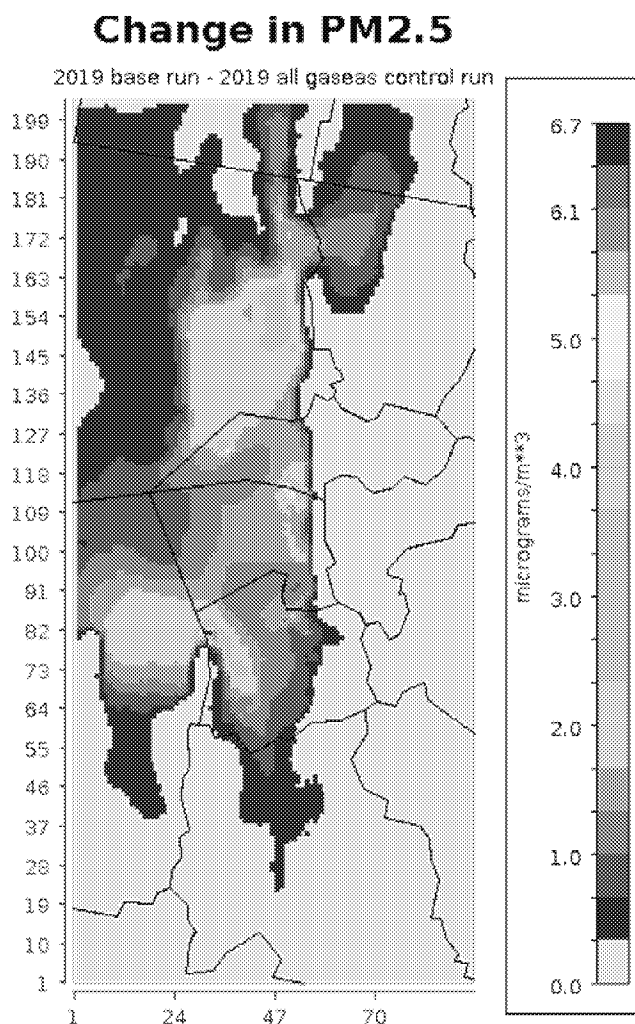


Figure 3.5.1: Change in modeled 24-hour PM_{2.5} on January 7 due to eliminating NO_x, SO_x, VOC, and NH₃ emissions from major stationary sources in the SLC non-attainment area EI. Significant changes in modeled PM_{2.5} appeared in several locations along the Wasatch Front. The largest change (6.7 µg/m³) was seen in western Salt Lake County.

4.0 Supplemental Source Apportionment (PSAT) Analysis

Another method to determine the PM_{2.5} contribution from SLC major stationary sources is source apportionment. For this analysis, UDAQ used the CAMx Particulate Matter Source Apportionment Technology (PSAT) to determine how much secondary PM_{2.5} came from major stationary sources in the SLC non-attainment area. PSAT does not determine the direct contribution from gas precursors, but PSAT can estimate how much secondary aerosol (nitrate, sulfate, ammonium) is from major stationary sources. For this

analysis, it is considered significant if the modeled PM_{2.5} concentrations attributed to major sources is greater than 1.5 µg/m³.

UDAQ tracked emissions from major stationary sources in the Salt Lake City non-attainment source region. UDAQ defined receptor cells in their PSAT analysis as 1.3 km grid-cells that were collocated with UDAQ PM_{2.5} FRM monitors in the SLC non-attainment area.

The PSAT analysis produced a 24-hour nitrate (NO₃) concentration of 1.74 µg/m³ that was attributed to SLC non-attainment area major stationary sources on January 7 at the Hawthorne monitor (Table 4.0.1, below). This was not observed in the NO_x precursor demonstration (section 3.1) where NO_x disbenefit effects in northern Salt Lake County played a large role in nitrate formation.

A sulfate (SO₄) concentration of 1.64 µg/m³ was attributed to SLC non-attainment area major stationary sources at the Magna monitor on the 7th day of the episode (Table 4.0.1). This supports the SO_x precursor demonstration results discussed in section 3.2 (Table 3.2.1), where eliminating major stationary source SO_x revealed a significant change in modeled PM_{2.5} at this location.

When we consider nitrate, sulfate and ammonium (NH₄) together, it appears SLC non-attainment area major stationary sources contributed to significant amounts of secondary aerosol at several UDAQ monitors. Other days in the episode did not show high attributions.

Date	Monitor	NH4 (point)	NO3 (point)	SO4 (point)	NH4+NO3+SO4 (point)
Jan. 7	HARRISV	0.03	0.99	0.40	1.42
	BOUNTIFUL	0.23	1.28	0.57	2.08
	MAGNA	0.39	1.23	1.64	3.25
	OGDEN	0.04	0.99	0.56	1.58
	TOOELE	0.01	0.31	0.52	0.84
	ERDA	0.03	0.54	0.80	1.36
	BRIGHAM	0.01	1.18	0.41	1.60
	HERRIMAN	0.31	0.79	0.35	1.45
	ROSE PARK	0.26	1.40	0.91	2.57
	HAWTHORNE	0.40	1.74	0.99	3.13

Table 4.0.1: 24-hour (January 7) secondary aerosol contribution from major stationary sources in the SLC non-attainment area at specific receptor sites collocated with PM_{2.5} FRM monitors. Contributions over 1.5 µg/m³ are highlighted in red.

When the SLC non-attainment area is examined as a whole, a significant amount of SO₄ is attributed to major stationary sources in western Salt Lake County, where a maximum change of 4.9 µg/m³ is shown (Figure 4.0.1 panel b). Localized SO₄ impacts are also seen in Weber County and north of the Brigham City monitor in Box Elder County. NO₃

impacts (Figure 4.0.1 panel a) appear in Box Elder County ($2.3 \mu\text{g}/\text{m}^3$) and along the Salt Lake/Davis County border. The PSAT results generally support the results from prior precursor demonstration modeling.

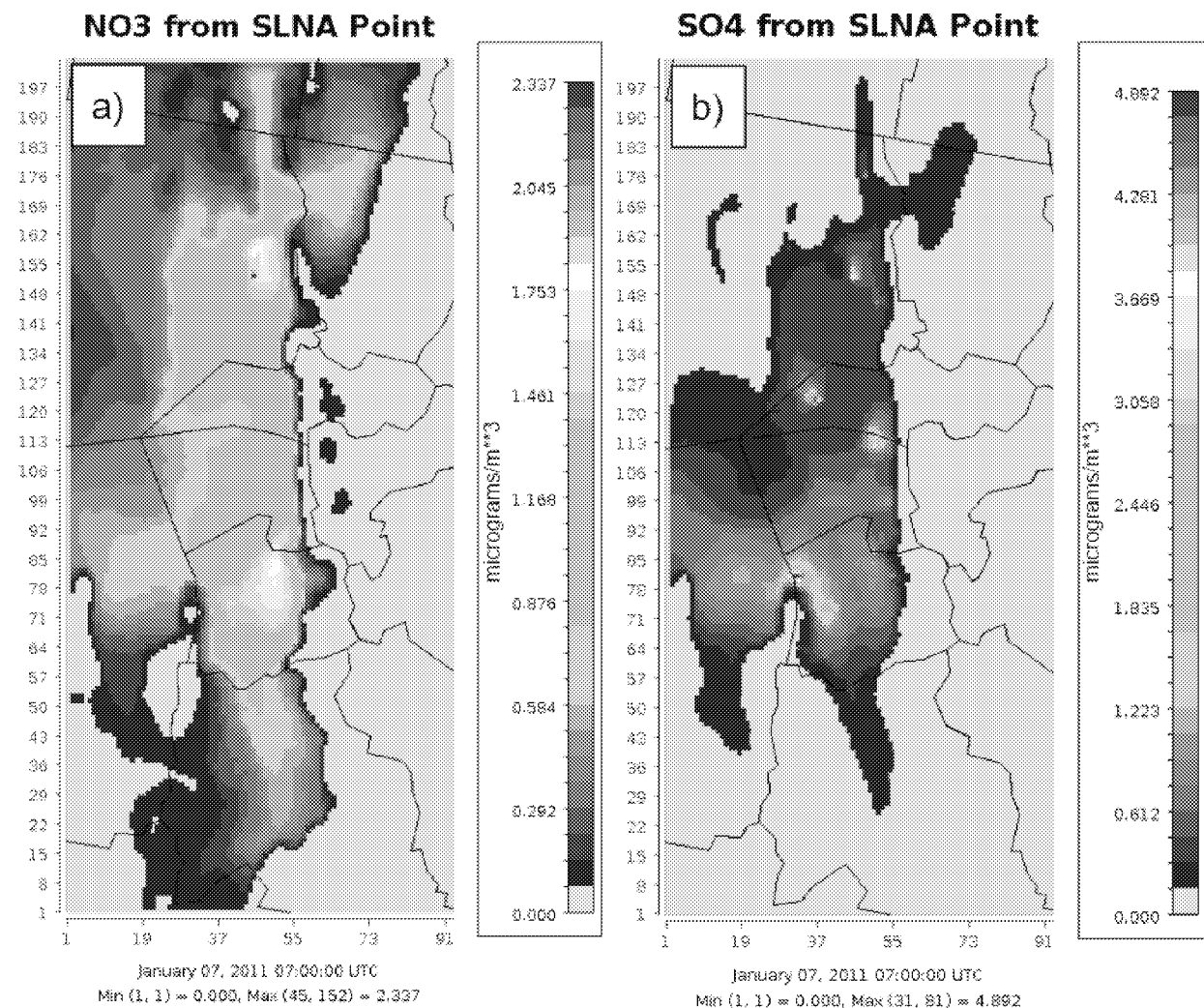


Figure 4.0.1: Contributions to modeled 24-hour PM_{2.5} species from major stationary sources in the SLC non-attainment area. Left panel (a) shows the contribution of SLC major sources to modeled particulate nitrate (NO₃) concentrations, while the right panel (b) shows the contribution of SLC major sources to modeled particulate sulfate (SO₄) concentrations.

5.0 Conclusion

The precursor demonstrations discussed in this document present a “concentration-based” approach, where all (100%) of the major stationary source emissions for a given precursor are eliminated. This approach differs from a “sensitivity-based” approach, where changes in modeled PM_{2.5} could be evaluated using different levels of emission

1 reductions (e.g., 30%, 50%, 70%). The precursor demonstrations presented here are
2 meant to be useful in identifying if further modeled tests would be needed to discern
3 significant precursor contributions from major stationary sources.
4

5 Throughout this document, $1.5 \mu\text{g}/\text{m}^3$ was considered a bright-line when determining the
6 significance of changes in modeled $\text{PM}_{2.5}$. However, different conclusions could
7 obviously be reached depending on this choice of threshold. Although supplemental
8 analyses (spatial fields, bias-correction, PSAT) have been included here, the technical
9 methodology used by UDAQ should not be considered definitive or exhaustive.
10
11

ITEM 5



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-088-18

M E M O R A N D U M

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Thomas Gunter, Rules Coordinator

DATE: December 17, 2018

SUBJECT: FINAL ADOPTION: Change in Proposed Rule R307-110-10. Section IX, Control Measures for Area and Point Sources, Part A, Fine Particulate Matter.

On September 5, 2018, the Board proposed R307-110-10 for a 30 day public comment period. The public comment period was held from October 1 through October 31, 2018, and no comments were received.

The amendments to Section IX, Control Measures for Area and Point Sources, Part A, for Fine Particulate Matter will have to be incorporated into the Utah Air Quality Rules. R307-110-10 is the rule that incorporates the new amendments to Part A into the rules. If the Board adopts the amendments proposed to Part A, these amendments will become part of Utah's State Implementation Plan when the rule is finalized.

Recommendation: Staff recommends the Board adopt change in proposed rule R307-110-10 as amended.

R307-110-10

December 17, 2018

Page 1 of 1

1 **Appendix 1: Regulatory Impact Summary Table***

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

7 **Appendix 2: Regulatory Impact to Non-Small Businesses**

This rule change is not expected to have any fiscal impacts on large businesses revenues or expenditures, because all controls were required for the previous version of Section IX, Part A and therefore will not cost or benefit any business further.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

***"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

19 **R307. Environmental Quality, Air Quality.**20 **R307-110. General Requirements: State Implementation Plan.**21 **R307-110-10. Section IX, Control Measures for Area and Point Sources, Part A, Fine Particulate Matter.**

The Utah State Implementation Plan, Section IX, Control Measures for Area and Point Sources, Part A, Fine Particulate Matter, as most recently amended by the Utah Air Quality Board on ~~December 2~~ January 2, 201~~8~~⁹, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[June 7]~~, 201~~8~~⁹

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

ITEM 6



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-094-18

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Bill Reiss, Environmental Engineer

DATE: December 18, 2018

SUBJECT: FINAL ADOPTION: SIP Subsection IX. Part H: Emission Limits and Operating Practices. Specifically Requirements in Subparts H. 1, 2, 11, and 12, as Amended.

On June 6, 2018, the Board proposed for public comment amendments to SIP Subsection IX. Part H Control Measures for Area and Point Sources, Emission Limits and Operating Practices Subparts 1, 2, 11 and 12. The terms in these subparts enforce the plan requirements for stationary sources located in the Salt Lake City PM_{2.5} nonattainment area (SLC NAA).

The originally proposed amendments to subparts 1 and 2 specifically affect PM₁₀ requirements, but were included to correct a calculation error, add clarification, and provide consistency throughout Part H.

The amendments addressing PM_{2.5} in subparts 11 and 12 were proposed to support a Serious Area SIP for the SLC NAA, providing therein for the implementation of best available control measures and technologies (BACM/BACT) at the large stationary “point” sources in the nonattainment area. These provisions include enforceable emission limitations as well as schedules and timetables for compliance.

Public comments were accepted from July 1st through August 15th. Numerous comments were received, and DAQ prepared a document summarizing and responding to those comments in advance of the October Board meeting.

The BACM / BACT requirements (in Part H) for stationary point sources had initially been proposed as an element that was “generally independent” of the attainment demonstration underlying the Serious Area SIP. For this reason, it was released before DAQ could complete the remainder of the SIP. Comments received on the earlier BACT requirements in Part H took issue with this stated disconnection from the broader SIP and its underlying attainment demonstration.

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Of the many comments received, one in particular from the Utah Petroleum Association (UPA) contended that it was premature to consider BACM/BACT for all four plan precursors for the major stationary point sources until the air quality modeling could ascertain whether in fact certain PM_{2.5} precursor emissions could or could not be exempted from the BACM/BACT provisions.

UPA's comment was supported by a precursor demonstration that concluded, for each of the PM_{2.5} Plan Precursors (NO_x, SO_x, VOC, and NH₃), that the emissions from existing major stationary sources located in the nonattainment area do not contribute significantly to ambient PM_{2.5} levels that exceed the standard in the area.

UDAQ also received supplemental information for the BACM/BACT reviews for four of the stationary sources: Hexcel, Rio Tinto Kennecott, Compass Minerals, and ATK Launch Systems, Inc. Promontory. On October 3, 2018, staff explained that this supplemental information would result in substantive changes to Part H.

Thus, Part H was re-proposed for public comment on October 3rd. This re-proposal also included several amendments made by the Board itself. These intended:

- That all stack testing be required at least once per year
- Elimination of differences in emission limitations by season, such that the more stringent limit be applied throughout the year. This would apply in six specific instances.
- Only the combustion of natural gas at Kennecott's Unit 4, even during summer months

A 30-day period of public review was held on this re-proposal throughout the month of November. Again, numerous comments were received, including some from DAQ staff. These comments have been summarized, with responses provided thereto, and included here as Attachment B.

Both SIP Parts, A and H, have been brought before the Board today for final adoption.

Regarding the issue of major stationary source precursor demonstrations, DAQ had indicated it would independently evaluate the contribution made by existing major stationary sources to the PM_{2.5} levels addressed by this Serious Area SIP. DAQ has done so, and the (draft) analysis is included as Attachment C to Agenda Item IV. This analysis has informed DAQ's responses to those comments, which are summarized and addressed in Attachment B to that same Agenda Item.

Most significantly, staff is not recommending that Utah elect to include any major stationary source PM_{2.5} precursor demonstration in its Serious Area SIP at this time.

Furthermore, it is not recommending that the emission limits and operating conditions articulated for major stationary sources in Part H be made conditional on the approval by EPA of any such major stationary source precursor demonstration.

Recommendation: Staff recommends that the Board adopt SIP Subsection IX. Part H: Emission Limits and Operating Practices, as further amended in subparts 1, 2, 11, and 12.

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Attachments A: Amended SIP Subsection IX. Part H: Emission Limits and Operating Practices. Specifically Proposed for Amendment are Requirements in Subparts H. 1, 2, 11, and 12.

Attachments B: Response to Comments Received During the November SIP Subsection IX. Part H Comment Period

1

2

3

4

5

6

7

ATTACHMENT A

8

9

10

Utah State Implementation Plan

Emission Limits and Operating Practices

Section IX, Part H

Adopted by the Air Quality Board
, 2019

H.1 General Requirements: Control Measures for Area and Point Sources, Emission Limits and Operating Practices, PM₁₀ Requirements

- a. Except as otherwise outlined in individual conditions of this Subsection IX.H.1 listed below, the terms and conditions of this Subsection IX.H.1 shall apply to all sources subsequently addressed in Subsection IX.H.2 and IX.H.3. Should any inconsistencies exist between these two subsections, the source specific conditions listed in IX.H.2 and IX.H.3 shall take precedence.
- b. Definitions.
 - i. The definitions contained in R307-101-2, Definitions, apply to Section IX, Part H.
 - ii. Natural gas curtailment means a period of time during which the supply of natural gas to an affected facility is halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas does not constitute a period of natural gas curtailment.
- c. Recordkeeping and Reporting
 - i. Any information used to determine compliance shall be recorded for all periods when the source is in operation, and such records shall be kept for a minimum of five years. Any or all of these records shall be made available to the Director upon request, and shall include a period of two years ending with the date of the request.
 - ii. Each source shall comply with all applicable sections of R307-150 Emission Inventories.
 - iii. Each source shall submit a report of any deviation from the applicable requirements of this Subsection IX.H, including those attributable to upset conditions, the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be submitted to the Director no later than 24-months following the deviation or earlier if specified by an underlying applicable requirement. Deviations due to breakdowns shall be reported according to the breakdown provisions of R307-107.
- d. Emission Limitations.
 - i. All emission limitations listed in Subsections IX.H.2 and IX.H.3 apply at all times, unless otherwise specified in the source specific conditions listed in IX.H.2 and IX.H.3.
 - ii. All emission limitations of PM₁₀ listed in Subsections IX.H.2 and IX.H.3 include both filterable and condensable PM, unless otherwise specified in the source specific conditions listed in IX.H.2 and IX.H.3.
- e. Stack Testing.

- 1
2
3 i. As applicable, stack testing to show compliance with the emission limitations for
4 the sources in Subsection IX.H.2 and I.X.H.3 shall be performed in accordance
5 with the following:
6
7 A. Sample Location: The emission point shall be designed to conform to the
8 requirements of 40 CFR 60, Appendix A, Method 1, or other EPA-approved testing
9 methods acceptable to the Director. Occupational Safety and Health Administration
10 (OSHA) approvable access shall be provided to the test location.
11
12 B. Volumetric Flow Rate: 40 CFR 60, Appendix A, Method 2, EPA Test Method
13 No. 19 "SO₂ Removal & PM, SO₂ NO_x Rates from Electric Utility Steam
14 Generators", or other EPA-approved testing methods acceptable to the
15 Director.
16
17 C. PM: 40 CFR 60, Appendix A Methods 5, 5b, 5f, 17 or other EPA-approved
18 testing methods acceptable to the Director.
19
20 D. PM₁₀: 40 CFR 51, Appendix M, Methods 201a and 202, or other EPA approved
21 testing methods acceptable to the Director. If a method other than 201a is used, the
22 portion of the front half of the catch considered PM₁₀ shall be based on information
23 in Appendix B of the fifth edition of the EPA document, AP-42, or other data
24 acceptable to the Director.
25
26 E. SO₂: 40 CFR 60 Appendix A, Method 6C or other EPA-approved testing
27 methods acceptable to the Director.
28
29 F. NO_x: 40 CFR 60 Appendix A, Method 7E or other EPA-approved testing
30 methods acceptable to the Director.
31
32 G. Calculations: To determine mass emission rates (lb/hr, etc.) the pollutant
33 concentration as determined by the appropriate methods above shall be multiplied
34 by the volumetric flow rate and any necessary conversion factors to give the results
35 in the specified units of the emission limitation.
36
37 H. A stack test protocol shall be provided at least 30 days prior to the test. A pretest
38 conference shall be held if directed by the Director.
39
40 I. The production rate during all compliance testing shall be no less than 90% of
41 the maximum production rate achieved in the previous three (3) years. If the
42 desired production rate is not achieved at the time of the test, the maximum
43 production rate shall be 110% of the tested achieved rate, but not more than
44 the maximum allowable production rate. This new allowable maximum
45 production rate shall remain in effect until successfully tested at a higher rate.
46 The owner/operator shall request a higher production rate when necessary.
47 Testing at no less than 90% of the higher rate shall be conducted. A new
48 maximum production rate (110% of the new rate) will then be allowed if the
49 test is successful. This process may be repeated until the maximum allowable
50 production rate is achieved.
51 f. Continuous Emission and Opacity Monitoring.

- 1
- 2 i. For all continuous monitoring devices, the following shall apply:
- 3
- 4 A. Except for system breakdown, repairs, calibration checks, and zero and span
- 5 adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator
- 6 of unaffected source shall continuously operate all required continuous
- 7 monitoring systems and shall meet minimum frequency of operation
- 8 requirements as outlined in R307-170 and 40 CFR 60.13. Flow measurement
- 9 shall be in accordance with the requirements of 40 CFR 52, Appendix E; 40
- 10 CFR 60 Appendix B; or 40 CFR 75, Appendix A.
- 11
- 12 B. The monitoring system shall comply with all applicable sections of R307-170; 40
- 13 CFR 13; and 40 CFR 60, Appendix B – Performance Specifications.
- 14
- 15 ii. Opacity observations of emissions from stationary sources shall be conducted in
- 16 accordance with 40 CFR 60, Appendix A, Method 9.
- 17
- 18 g. Petroleum Refineries.
- 19
- 20 i. Limits at Fluid Catalytic Cracking Units (FCCU)
- 21
- 22 A. FCCU SO₂ Emissions
- 23
- 24 I. Each owner or operator of an FCCU shall comply with an SO₂ emission limit
- 25 of 25 ppmvd @ 0% excess air on a 365-day rolling average basis and 50
- 26 ppmvd @ 0% excess air on a 7-day rolling average basis.
- 27
- 28 II. Compliance with this limit shall be determined ~~[by following 40 C.F.R.~~
- 29 ~~§60.105a(g)]~~ using a CEM in accordance with IX.H.1.f.
- 30
- 31 B. FCCU PM Emissions
- 32
- 33 I. Each owner or operator of an FCCU shall comply with an emission limit of 1.0
- 34 pounds PM per 1000 pounds burn-off.
- 35
- 36 II. Compliance with this limit shall be determined by following the stack test
- 37 protocol specified in 40 C.F.R. §60.106(b) or 40 C.F.R. §60.104a(d) to
- 38 measure PM emissions on the FCCU. Each owner operator shall conduct stack
- 39 tests ~~[annually]~~ once every three (3) years at each FCCU.
- 40
- 41 III. No later than January 1, 2019, each owner or operator of an FCCU subject to
- 42 NSPS Ja shall install, operate and maintain a continuous parameter monitor
- 43 system (CPMS) to measure and record operating parameters from the FCCU
- 44 ~~[for determination of source-wide particulate emissions]~~ and control devices as
- 45 per the requirements of 40 CFR 60.105a(b)(1). No later than January 1, 2019,
- 46 each owner or operator of an FCCU not subject to NSPS Ja shall install,
- 47 operate and maintain a continuous opacity monitoring system to measure and
- 48 record opacity from the FCCU as per the requirements of 40 CFR 63.1572(b)
- 49 and comply with the opacity limitation as per the requirements of Table 7 to
- 50 Subpart UUU of Part 63.
- 51

1 ii. Limits on Refinery Fuel Gas.

2
3 A. All petroleum refineries in or affecting any PM_{2.5} nonattainment area or any PM₁₀
4 nonattainment or maintenance area shall reduce the H₂S content of the refinery
5 plant gas to 60 ppm or less as described in 40 CFR 60.102a. Compliance shall be
6 based on a rolling average of 365 days. The owner/operator shall comply with the
7 fuel gas monitoring requirements of 40 CFR 60.107a and the related recordkeeping
8 and reporting requirements of 40 CR 60.108a. As used herein, refinery “plant gas”
9 shall have the meaning of “fuel gas” as defined in 40 CFR 60.101a, and may be
10 used interchangeably.

11
12 B. For natural gas, compliance is assumed while the fuel comes from a public utility.

13
14 iii. Sulfur Removal Units

15
16 A. All petroleum refineries in or affecting any PM_{2.5} nonattainment area or any
17 PM₁₀ nonattainment or maintenance area shall require:

18
19 I. Sulfur removal units/plants (SRUs) that are at least 95% effective in
20 removing sulfur from the streams fed to the unit; or

21
22 II. SRUs that meet the SO₂ emission limitations listed in 40 CFR 60.102a(f)(1) or
23 60.102a(f)(2) as appropriate.

24
25 B. The amine acid gas and sour water stripper acid gas shall be processed in the
26 SRU(s).

27
28 C. Compliance shall be demonstrated by daily monitoring of flows to the SRU(s).
29 Continuous monitoring of SO₂ concentration in the exhaust stream shall be
30 conducted via CEM as outlined in IX.H.1.f above. Compliance shall be
31 determined on a rolling
32 30-day average.

33
34 iv. No Burning of Liquid Fuel Oil in Stationary Sources

35
36 A. No petroleum refineries in or affecting any PM_{2.5} nonattainment area or any PM₁₀
37 nonattainment or maintenance area shall be allowed to burn liquid fuel oil in
38 stationary sources except during natural gas curtailments or as specified in the
39 individual subsections of Section IX, Part H.

40
41 B. The use of diesel fuel meeting the specifications of 40 CFR 80.510 in
42 standby or emergency equipment is exempt from the limitation of
43 IX.H.1.g.iv.A above.

44
45 v. Requirements on Hydrocarbon Flares.

46
47 A. All hydrocarbon flares at petroleum refineries located in or affecting any PM_{2.5}
48 nonattainment area or any PM₁₀ nonattainment or maintenance area within the
49 State shall be subject to the flaring requirements of NSPS Subpart Ja (40 CFR
50 60.100a–109a), if not already subject under the flare applicability provisions of
51 Ja.

1
2 B. No later than January 1, 2019, all major source petroleum refineries in or affecting
3 any PM_{2.5} nonattainment area or an PM₁₀ nonattainment or maintenance area shall
4 either 1) install and operate a flare gas recovery system designed to limit
5 hydrocarbon flaring produced from each affected flare during normal operations to
6 levels below the values listed in 40 CFR 60.103a(c), or 2) limit flaring during normal
7 operations to 500,000 scfd for each affected flare. Flare gas recovery is not required
8 for dedicated SRU flare and header systems, or HF flare and header systems.

H.2 Source Specific Emission Limitations in Salt Lake County PM₁₀ Nonattainment/Maintenance Area

a. Big West Oil Company

i. Source-wide PM₁₀ Cap

No later than January 1, 2019, combined emissions of PM₁₀ shall not exceed 1.037 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.a.i.B below, the default emission factors to be used are as follows:

Natural gas:

Filterable PM₁₀: 1.9 lb/MMscf

Condensable PM₁₀: 5.7 lb/MMscf

Plant gas:

Filterable PM₁₀: 1.9 lb/MMscf

Condensable PM₁₀: 5.7 lb/MMscf

Fuel Oil: The PM₁₀ emission factor shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Cooling Towers: The PM₁₀ emission factor shall be determined from the latest edition of AP-42 or other EPA-approved methods.

FCC Stacks: The PM₁₀ emission factor shall be established by stack test.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors listed in IX.H.2.a.i.A above apply until such time as stack testing is conducted as provided in IX.H.1.e or as outlined below:

PM₁₀ stack testing on the FCC shall be performed initially no later than January 1, 2019 and at least [annually]once every three (3) years thereafter. Stack testing shall be performed as outlined in IX.H.1.e.

C. Compliance with the source-wide PM₁₀ Cap shall be determined for each day as follows:

Total 24-hour PM₁₀ emissions for the emission points shall be calculated by

adding the daily results of the PM₁₀ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the cooling towers, and the FCCs to arrive at a combined daily PM₁₀ emission total.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily gas consumption shall be measured by meters that can delineate the flow of gas to the boilers, furnaces and the SRU incinerator.

The equation used to determine emissions from these units shall be as follows: Emission Factor (lb/MMscf) * Gas Consumption (MMscf/24 hrs)/(2,000 lb/ton)

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The daily PM₁₀ emissions from the FCC shall be calculated using the following equation:

$$E = FR * EF$$

Where:

E = Emitted PM₁₀

FR = Feed Rate to Unit (kbbls/day)

EF = emission factor (lbs/kbbl), established by the most recent stack test

Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

ii. Source-Wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 0.80 tons per day (tpd) and 195 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.a.ii.B below, the default emission factors to be used are as follows:

Natural gas: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Plant gas: assumed equal to natural gas

1 Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-
2 approved methods.

3
4 Where mixtures of fuel are used in a Unit, the above factors shall be
5 weighted according to the use of each fuel.

- 6
7 B. The default emission factors listed in IX.H.2.a.ii.A above apply until such time as
8 stack testing is conducted as provided in IX.H.1.e or as outlined below:
9

10 Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment
11 above 40 MMBtu/hr has been performed. NO_x emissions for the FCC are monitored
12 with a continuous emission monitoring system. Refinery Boilers and heaters over 40
13 MMBtu/hr but less than 100 MMBtu/hr are in compliance with monitoring and work
14 practice standards of Subpart DDDD of Part 63.

- 15
16 C. Compliance with the source-wide NO_x Cap shall be determined for each
17 day as follows:
18

19 Total 24-hour NO_x emissions shall be calculated by adding the emissions for each
20 emitting unit. The emissions for each emitting unit shall be calculated by
21 multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each
22 fuel combusted at each affected unit by the associated emission factor, and
23 summing the results.

24
25 Daily plant gas consumption at the furnaces, boilers and SRU incinerator
26 shall be measured by flow meters. The equations used to determine emissions
27 shall be as follows:
28

29
$$\text{NO}_x = \text{Emission Factor (lb/MMscf)} * \text{Gas Consumption (MMscf/24 hrs)} / (2,000$$

30
$$\text{lb/ton})$$
 Where the emission factor is derived from the fuel used, as listed in
31 IX.H.2.a.ii.A above
32

33 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
34 tanks that supply combustion sources.
35

36 The daily NO_x emissions from the FCC shall be calculated using a CEM as outlined
37 in IX.H.1.f
38

39 Total daily NO_x emissions shall be calculated by adding the results of the above NO_x
40 equations for natural gas and plant gas combustion to the estimate for the FCC.
41

42 For purposes of this subsection a “day” is defined as a period of 24-hours
43 commencing at midnight and ending at the following midnight.
44

45 Results shall be tabulated for each day, and records shall be kept which include
46 the meter readings (in the appropriate units) and the calculated emissions.

iii. Source-Wide SO₂ Cap

No later than January 1, 2019, combined emissions of SO₂ shall not exceed 0.60 tons per day (tpd) and 140 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. The default emission factors to be used are as follows:

Natural Gas - 0.60 lb SO₂/MMscf gas

Plant Gas: The emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a CEM as outlined in IX.H.1.f. .

SRUs: The emission rate shall be determined by multiplying the sulfur dioxide concentration in the flue gas by the flow rate of the flue gas. The sulfur dioxide concentration in the flue gas shall be determined by CEM as outlined in IX.H.1.f.

Fuel oil: The emission factor to be used for combustion shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or EPA-approved equivalent acceptable to the Director, and the density of the fuel oil, as follows:

$$EF \text{ (lb SO}_2\text{/k gal)} = \text{density (lb/gal)} * (1000 \text{ gal/k gal)} * \text{wt. \% S/100} * (64 \text{ lb SO}_2\text{/32 lb S)}$$

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. Compliance with the source-wide SO₂ Cap shall be determined for each day as follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂ emissions for natural gas and plant fuel gas combustion, to those from the FCC and SRU stacks.

The daily SO_x emission from the FCC shall be calculated using a CEM as outlined in IX.H.11.f.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all

tanks that supply combustion sources.

For purposes of this subsection a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each day), all meter reading (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

iv. Emergency and Standby Equipment

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

v. Alternate Startup and Shutdown Requirements

A. During any day which includes startup or shutdown of the FCCU, combined emissions of SO₂ shall not exceed 1.2 tons per day (tpd). For purposes of this subsection, a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

B. The total number of days which include startup or shutdown of the FCCU shall not exceed ten (10) per 12-month rolling period.

vi. ~~Requirements on Hydrocarbon Flares~~

~~A. No later than January 1, 2021, routine flaring will be limited to 300,000 scfd for each affected flare.]~~ No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
FCCU Regenerator	Flue gas blowback "Pall Filter", quaternary cyclones with fabric filter
H-404 #1 Crude Heater	Ultra-low NO _x burners
Refinery Flares	Subpart Ja, and MACT CC flaring standards
SRU	Tail gas incinerator and redundant caustic scrubber
Product Loading Racks	Vapor recovery and vapor combustors
Wastewater Treatment System	API separator fixed cover, carbon adsorber canisters to be installed 2019.

- 1 b. Bountiful City Light and Power: Power Plant
- 2 i. Emissions to the atmosphere shall not exceed the following rates and
- 3 concentrations:
- 4 A. GT #1 (5.3 MW Turbine)
- 5 Exhaust Stack: 0.6 g NO_x / kW-hr
- 6
- 7 B. GT #2 and GT #3 (each TITAN Turbine) Exhaust Stack: 7.5 lb NO_x / hr
- 8
- 9 ii. Compliance to the above emission limitations shall be determined by stack test.
- 10 Stack testing shall be performed as outlined in IX.H.1.e.
- 11
- 12 A. Initial stack tests have been performed. Each turbine shall be tested at least once
- 13 per year.
- 14
- 15 iii. Combustion Turbine Startup / Shutdown Emission Minimization Plan
- 16
- 17 A. Startup begins when natural gas is supplied to the combustion turbine(s) with the
- 18 intent of combusting the fuel to generate electricity. Startup conditions end within
- 19 sixty (60) minutes of natural gas being supplied to the turbine(s).
- 20
- 21 B. Shutdown begins with the initiation of the stop sequence of a turbine until the
- 22 cessation of natural gas flow to the turbine.
- 23
- 24 C. Periods of startup or shutdown shall not exceed two (2) hours per combustion
- 25 turbine per day.
- 26
- 27
- 28

1 c. Central Valley Water Reclamation Facility: Wastewater Treatment Plant

2 i. NO_x emissions from the operation of all engines at the plant shall not exceed 0.648
3 tons per day.

4
5 ii. Compliance with the emission limitation shall be determined by summing the
6 emissions from all the engines. Emission from each engine shall be calculated from
7 the following equation:

8
9 Emissions (tons/day) = (Power production in kW-hrs/day) x (Emission
10 factor in grams/kW- hr) x (1 lb/453.59 g) x (1 ton/2000 lbs)

11
12 A. Stack tests shall be performed in accordance with IX.H.1.e. Each engine shall
13 be tested at least ~~[annually]~~ every three years from the previous test.

14
15 B. The NO_x emission factor for each engine shall be derived from the most recent
16 stack test.

17
18 C. NO_x emissions shall be calculated on a daily basis.

19
20 D. A day is equivalent to the time period from midnight to the following
21 midnight.

22
23 E. The number of kilowatt hours generated by each engine shall be determined
24 by examination of electrical meters, which shall record electricity
25 production on a continuous basis.

d. Chevron Products Company

i. Source-wide PM₁₀ Cap

No later than January 1, 2019, combined emissions of PM₁₀ shall not exceed 0.715 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.d.i.B below, the default emission factors to be used are as follows:

Natural gas:

Filterable PM₁₀: 1.9 lb/MMscf

Condensable PM₁₀: 5.7 lb/MMscf

Plant gas:

Filterable PM₁₀: 1.9 lb/MMscf

Condensable PM₁₀: 5.7 lb/MMscf

HF alkylation polymer: shall be determined from the latest edition of AP-42 (HF alkylation polymer treated as fuel oil #6) or other EPA-approved methods.

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Cooling Towers: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

FCC Stack:

The PM₁₀ emission factors shall be based on the most recent stack test and verified by parametric monitoring as outlined in IX.H.1.g.i.B.III

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors listed in IX.H.2.d.i.A above apply until such time as stack testing is conducted as provided in IX.H.1.e or as outlined below:

Initial PM₁₀ stack testing on the FCC stack has been performed and shall be conducted at least [annually] once every three (3) years from the date of the last stack test. Stack testing shall be performed as outlined in IX.H.1.e.

C. Compliance with the source-wide PM₁₀ Cap shall be determined for each day as follows:

Total 24-hour PM₁₀ emissions for the emission points shall be calculated by adding the daily results of the PM₁₀ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the cooling towers, and the FCC to arrive at a combined daily PM₁₀ emission total. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The equation used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/MMscf) * Gas Consumption (MMscf/24 hrs)/(2,000 lb/ton) Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 2.1 tons per day (tpd) and 766.5 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.d.ii.B below, the default emission factors to be used are as follows:

Natural gas: shall be determined from the latest edition of AP-42 Plant gas: assumed equal to natural gas or other EPA-approved methods.

Alkylation polymer: shall be determined from the latest edition of AP-42 (as fuel oil #6) or other EPA-approved methods.

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors listed in IX.H.2.d.ii.A above apply until such time as stack testing is conducted as provided in IX.H.1.e or as outlined below:

Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment above

1 100 MMBtu/hr has been performed and shall be conducted at least [~~annually~~] once every
2 three (3) years from the date of the last stack test. At that time a new flow-weighted
3 average emission factor in terms of: lbs/MMBtu shall be derived. Stack testing shall be
4 performed as outlined in IX.H.1.e.

5
6 C. Compliance with the source-wide NO_x Cap shall be determined for each day as
7 follows:

8
9 Total 24-hour NO_x emissions shall be calculated by adding the emissions for each
10 emitting unit. The emissions for each emitting unit shall be calculated by multiplying
11 the hours of operation of a unit, feed rate to a unit, or quantity of each fuel combusted
12 at each affected unit by the associated emission factor, and summing the results.

13
14 A NO_x CEM shall be used to calculate daily NO_x emissions from the FCC. Emissions
15 shall be determined by multiplying the nitrogen dioxide concentration in the flue gas by
16 the flow rate of the flue gas. The NO_x concentration in the flue gas shall be determined
17 by a CEM as outlined in IX.H.1.f.

18
19 For purposes of this subsection a “day” is defined as a period of 24-hours commencing
20 at midnight and ending at the following midnight.

21
22 Daily natural gas and plant gas consumption shall be determined through the use of
23 flow meters.

24
25 Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks
26 that supply combustion sources.

27
28 Results shall be tabulated for each day, and records shall be kept which include the
29 meter readings (in the appropriate units) and the calculated emissions.

30
31 iii. Source-wide SO₂ Cap

32 No later than January 1, 2019, combined emissions of SO₂ shall not exceed 1.05 tons per day
33 (tpd) and 383.3 tons per rolling 12-month period.

34
35 A Setting of emission factors:

36
37 The emission factors derived from the most current performance test shall be applied to
38 the relevant quantities of fuel combusted. The default emission factors to be used are as
39 follows:

40
41 FCC: The emission rate shall be determined by the FCC SO₂ CEM as outlined in
42 IX.H.1.f.

43
44 SRUs: The emission rate shall be determined by multiplying the sulfur dioxide
45 concentration in the flue gas by the flow rate of the flue gas. The sulfur dioxide
46 concentration in the flue gas shall be determined by CEM as outlined in IX.H.1.f.

Natural gas: EF = 0.60 lb/MMscf

Fuel oil & HF Alkylation polymer: The emission factor to be used for combustion shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or EPA-approved equivalent acceptable to the Director, and the density of the fuel oil, as follows:

$$\text{EF (lb SO}_2\text{/k gal)} = \text{density (lb/gal)} * (1000 \text{ gal/k gal}) * \text{wt.\% S/100} * (64 \text{ lb SO}_2\text{/32 lb S})$$

Plant gas: the emission factor shall be calculated from the H₂S measurement obtained from the H₂S CEM.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. Compliance with the source-wide SO₂ Cap shall be determined for each day as follows:

Total daily SO₂ emissions shall be calculated by adding the daily SO₂ emissions for natural gas and plant fuel gas combustion, to those from the FCC and SRU stacks.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each one-hour period), all meter reading (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

iv. Emergency and Standby Equipment and Alternative Fuels

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

B. HF alkylation polymer may be burned in the Alky Furnace (F-36017).

C. Plant coke may be burned in the FCC Catalyst Regenerator.

v. Compressor Engine Requirements

A. Emissions of NO_x from each rich-burn compressor engine shall not exceed the following:

Engine Number	NO _x in ppmvd @ 0% O ₂
K35001	236
K35002	208
K35003	230

B Initial stack testing to demonstrate compliance with the above emission limitations shall be performed no later than January 1, 2019 and at least ~~[annually]~~ once every three (3) years from the date of the last stack test thereafter. Stack testing shall be performed as outlined in IX.H.1.e.

vi. Flare Calculation

A. Chevron's Flare #3 receives gases from its Isomerization unit, Reformer unit as well as its HF Alkylation Unit. The HF Alkylation Unit's flow contribution to Flare #3 will not be included in determining compliance with the flow restrictions set in IX.H.1.g.v.B

i. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
Boilers: 5, 6, 7	Low NOx burners and flue gas recirculation (FGR)
Cooling Water Towers	High efficiency drift eliminators
Crude Furnaces F21001, F21002	Low NOx burners
Crude Oil Loading	Vapor Combustion Unit (VCU)
FCC Regenerator Stack	Vacuum gas oil hydrotreater, Electrostatic precipitator (ESP) and cyclones
Flares: Flare 1, 2, 3	Flare gas recovery system
HDS Furnaces F64010, F64011	Low NOx burners
Reformer Compressor Drivers K35001, K35002, K35003	Selective Catalytic Reduction (SCR)
Sulfur Recovery Unit 1	Tail gas treatment unit and tail gas incineration
Sulfur Recovery Unit 2	Tail gas treatment unit and tail gas incineration
Wastewater Treatment Plant	Existing wastewater controls system of induced air flotation (IAF) and regenerative thermal oxidation (RTO)

1 e. Hexcel Corporation: Salt Lake Operations

- 2
3 i. The following limits shall not be exceeded for fiber line
4 operations:

5
6 A. 5.50 MMscf of natural gas consumed per day.

7
8 B. 0.061 MM pounds of carbon fiber produced per day.

9
10 C. Compliance with each limit shall be determined by the following methods:

11
12 I. Natural gas consumption shall be determined by examination of natural
13 gas billing records for the plant and onsite pipe-line metering.

14
15 II. Fiber production shall be determined by examination of plant production
16 records. III. Records of consumption and production shall be kept on a daily
17 basis for all periods when the plant is in operation.

- 18
19 ii. After a shutdown and prior to startup of fiber lines 13, 14, 15, or 16, the line's
20 baghouse(s) shall be started and remain in operation during production.

21
22 A. During fiber line production, the static pressure differential across the filter media
23 shall be within the manufacturer's recommended range and shall be recorded daily.

24
25 B. The manometer or the differential pressure gauge shall be calibrated according to
26 the manufacturer's instructions at least once every 12 months.

f. Holly Refining and Marketing Company

i. Source-wide PM₁₀ Cap

No later than January 1, 2019, PM₁₀ emissions from all sources shall not exceed 0.416 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.g.i.B below, the default emission factors to be used are as follows:

Natural gas or Plant gas:

non-NSPS combustion equipment: 7.65 lb PM₁₀/MMscf

NSPS combustion equipment: 0.52 lb PM₁₀/MMscf

Fuel oil:

The filterable PM₁₀ emission factor for fuel oil combustion shall be determined based on the sulfur content of the oil as follows:

$$\text{PM}_{10} \text{ (lb/1000 gal)} = (10 * \text{wt. \% S}) + 3.22$$

The condensable PM₁₀ emission factor for fuel oil combustion shall be determined from the latest edition of AP-42.

Cooling Towers: The PM₁₀ emission factor shall be determined from the latest edition of AP-42.

FCC Wet Scrubbers:

The PM₁₀ emission factors shall be based on the most recent stack test and verified by parametric monitoring as outlined in IX.H.1.g.i.B.III. As an alternative to a continuous parameter monitor system or continuous opacity monitoring system for PM emissions from any FCCU controlled by a wet gas scrubber, as required in Subsection IX.H.1.g.i.B.III, the owner/operator may satisfy the opacity monitoring requirements from its FCC Units with wet gas scrubbers through an alternate monitoring program as approved by the EPA and acceptable to the Director.

B. The default emission factors listed in IX.H.2.f.i.A above apply until such time as stack testing is conducted as outlined below:

Initial stack testing on all NSPS combustion equipment shall be conducted no later than January 1, 2019 and at least [annually]once every three (3) years from the date of the last stack test. At that time a new flow-weighted average emission factor in terms of: lb PM₁₀/MMBtu shall be derived. Stack testing shall be

performed as outlined in IX.H.1.e.

C. Compliance with the source-wide PM₁₀ Cap shall be determined for each day as follows:

Total 24-hour PM₁₀ emissions for the emission points shall be calculated by adding the daily results of the PM₁₀ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the cooling towers and wet scrubbers to arrive at a combined daily PM₁₀ emission total.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters on all gas-fueled combustion equipment.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply fuel oil to combustion sources.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Natural/Plant Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/kgal)} * \text{Fuel Oil Consumption (kgal/day)} / (2,000 \text{ lb/ton})$$

Results shall be tabulated for each day, and records shall be kept which include all meter readings (in the appropriate units), and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, NO_x emissions into the atmosphere from all emission points shall not exceed 347.1 tons per rolling 12-month period and 2.09 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.g.ii.B below, the default emission factors to be used are as follows:

Natural gas/refinery fuel gas combustion using:

Low NO_x burners (LNB): 41 lbs/MMscf

Ultra-Low NO_x (ULNB) burners: 0.04 lbs/MMbtu

Next Generation Ultra Low NO_x burners (NGULNB): 0.10 lbs/MMbtu

Selective catalytic reduction (SCR): 0.02 lbs/MMbtu

All other combustion burners: 100 lb/MMscf

Where:

"Natural gas/refinery fuel gas" shall represent any combustion of natural gas, refinery fuel gas, or combination of the two in the associated burner.

All fuel oil combustion: 120 lbs/Kgal

B. The default emission factors listed in IX.H.2.f.ii.A above apply until such time as stack testing is conducted as outlined in IX.H.1.e or by NSPS.

C. Compliance with the Source-wide NO_x Cap shall be determined for each day as follows:

Total daily NO_x emissions for emission points shall be calculated by adding the results of the NO_x equations for plant gas, fuel oil, and natural gas combustion listed below. For purposes of this subsection a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emissions (tons/day) = Emission Factor (lb/MMscf) * Natural Gas Consumption (MMscf/day)/(2,000 lb/ton)

Emissions (tons/day) = Emission Factor (lb/MMscf) * Plant Gas Consumption (MMscf/day)/(2,000 lb/ton)

Emissions (tons/day) = Emission Factor (lb/MMBTU) * Burner Heat Rating (BTU/hr) * 24 hours per day /(2,000 lb/ton)

Emissions (tons/day) = Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/day)/(2,000 lb/ton)

Results shall be tabulated for each day; and records shall be kept which include

the meter readings (in the appropriate units), emission factors, and the calculated emissions.

iii. Source-wide SO₂ Cap

No later than January 1, 2019, the emission of SO₂ from all emission points (excluding routine SRU turnaround maintenance emissions) shall not exceed 110.3 tons per rolling 12-month period and 0.31 tons per day (tpd).

A. Setting of emission factors:

The emission factors listed below shall be applied to the relevant quantities of fuel combusted:

Natural gas - 0.60 lb SO₂/MMscf

Plant gas - The emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a CEM which will measure the H₂S content of the fuel gas. The CEM shall operate as outlined in IX.H.1.f.

Fuel oil - The emission factor to be used in conjunction with fuel oil combustion shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or EPA-approved equivalent, and the density of the fuel oil, as follows:

$$(\text{lb of SO}_2/\text{kgal}) = (\text{density lb/gal}) * (1000 \text{ gal/kgal}) * (\text{wt. \%S})/100 * (64 \text{ g SO}_2/32 \text{ g S})$$

The weight percent sulfur and the fuel oil density shall be recorded for each day any fuel oil is combusted.

B. Compliance with the Source-wide SO₂ Cap shall be determined for each day as follows:

Total daily SO₂ emissions shall be calculated by adding daily results of the SO₂ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

The equations used to determine emissions are:

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Natural Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Plant Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/kgal)} * \text{Fuel Oil Consumption}$$

(kgal/24 hrs)/(2,000 lb/ton)

For purposes of these equations, fuel consumption shall be measured as outlined below:

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each one-hour period), all meter reading (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

iv. Emergency and Standby Equipment

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

v. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
Process heaters and boilers	Boilers 8&11: LNB+SCR Boilers 5, 9 & 10: SCR Process heaters 20H2, 20H3 23H1, 24H1, 25H1: ULNB
Cooling water towers 10, 11	High efficiency drift eliminators
FCCU regenerator stacks	WGS with Lo-TOx
Flares	Flare gas recovery system
Sulfur recovery unit	Tail gas incineration and WGS with Lo-TOx
Wastewater treatment plant	API separators, dissolved gas floatation (DGF), moving bed bio-film reactors (MBBR)

1 g. Kennecott Utah Copper (KUC): Mine

2 i. Bingham Canyon Mine (BCM)

- 3
4 A. Maximum total mileage per calendar day for diesel-powered ore and waste haul trucks
5 shall not exceed 30,000 miles.

6
7 KUC shall keep records of daily total mileage for all periods when the mine is in
8 operation. KUC shall track haul truck miles with a Global Positioning System or
9 equivalent. The system shall use real time tracking to determine daily mileage.

- 10
11 B. To minimize fugitive dust on roads at the mine, the owner/operator shall
12 perform the following measures:

13
14 I. Apply water to all active haul roads as weather and operational conditions warrant
15 except during precipitation or freezing weather conditions, and shall apply a
16 chemical dust suppressant to active haul roads located outside of the pit influence
17 boundary no less than twice per year.

18
19 II. Chemical dust suppressant shall be applied as weather and operational conditions
20 warrant except during precipitation or freezing weather conditions on unpaved
21 access roads that receive haul truck traffic and light vehicle traffic.

22
23 III. Records of water and/or chemical dust control treatment shall be kept for all
24 periods when the BCM is in operation.

25
26 IV. KUC is subject to the requirements in the most recent federally approved Fugitive
27 Emissions and Fugitive Dust rules.

- 28
29 C. To minimize emissions at the mine, the owner/operator shall:

30
31 I. Control emissions from the in-pit crusher with a
32 baghouse.

33
34 ~~[D. Implementation Schedule~~

35
36 ~~KUC shall purchase new haul trucks with the highest engine Tier level available which~~
37 ~~meet mining needs. KUC shall maintain records of haul trucks purchased and retired]~~

38
39 ii. Copperton Concentrator (CC)

- 40
41 A. Control emissions from the Product Molybdenite Dryers with a scrubber during
42 operation of the dryers.

43
44 During operation of the dryers, the static pressure differential between the inlet and
45 outlet of the scrubber shall be within the manufacturer's recommended range and shall
46 be recorded weekly.

47
48 The manometer or the differential pressure gauge shall be calibrated according to the
49 manufacturer's instructions at least once per year.

h. Kennecott Utah Copper (KUC): Power Plant and Tailings Impoundment

i. Utah Power Plant

A. Boilers #1, #2, and #3 shall not operate.

B. Unit #5 shall not exceed the following emission rates to the atmosphere:

Pollutant	lb/hr	lb/event	ppmdv (15% O ₂ dry)
-----------	-------	----------	-----------------------------------

I. PM₁₀ with duct firing:

Filterable + condensable	18.8		
--------------------------	------	--	--

II. NO_x:

Startup/shutdown		395	2.0
------------------	--	-----	-----

III. Startup / Shutdown Limitations:

1. The total number of startups and shutdowns together shall not exceed 690 per calendar year.

2. The NO_x emissions shall not exceed 395 lbs from each startup/shutdown event, which shall be determined using manufacturer data.

3. Definitions:

(i) Startup cycle duration ends when the unit achieves half of the design electrical generation capacity.

(ii) Shutdown duration cycle begins with the initiation of turbine shutdown sequence and ends when fuel flow to the gas turbine is discontinued.

C. Upon commencement of operation of Unit #5*, stack testing to demonstrate compliance with the emission limitations in IX.H.2.h.i.B shall be performed as follows for the following air contaminants

* Initial compliance testing for the natural gas turbine and duct burner is required. The initial test date shall be performed within 60 days after achieving the maximum heat input capacity production rate at which the affected facility will be operated and in no case later than 180 days after the initial startup of a new emission source.

The limited use of natural gas during maintenance firings and break-in firings does not constitute operation and does not require stack testing.

Pollutant	Test Frequency
-----------	----------------

I. PM ₁₀	every year
---------------------	------------

II. NO_x every year

D. The following requirements are applicable to Unit #4 during the period November 1 to February 28/29 inclusive:

I. ~~[Ø]~~ During the period from November 1, to the last day in February inclusive, only natural gas shall be used as a fuel, unless the supplier or transporter of natural gas imposes a curtailment. The power plant may then burn coal, only for the duration of the curtailment plus sufficient time to empty the coal bins following the curtailment. The Director shall be notified of the curtailment within 48 hours of when it begins and within 48 hours of when it ends.

II. When burning natural gas the emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

Pollutant	grains/dscf	ppmdv (3% O ₂)
68°F, 29.92 in. Hg		

1. PM₁₀ Units #1, #2, #3 and #4

filterable	0.004
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filterable + condensable	0.03
-----------------------------	------

2. NO_x*

*NO_x emissions from Unit #4 are limited to the more stringent limit in Part H.12.k.i.

III. When using coal as a fuel during a curtailment of the natural gas supply, emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

Pollutant	grains/dscf	ppmdv (3% O ₂)
68°F, 29.92 in Hg		

~~1.~~ Unit #4
(i) PM₁₀

filterable	0.029
------------	-------

filterable + condensable	0.29
-----------------------------	------

(ii) NO_x*

*NO_x emissions from Unit #4 are limited to the more stringent limit in Part H.12.k.i.

IV. If the units operated during the months specified above, stack testing to show

compliance with the emission limitations in H.2.h.i.D.II and III shall be performed as follows for the following air contaminants:

Pollutant	Test Frequency	Initial Test
1. PM ₁₀	every year	#

Initial testing shall be performed when burning natural gas and also when burning coal as fuel. The initial test date shall be performed within 60 days after achieving the maximum heat input capacity production rate at which the affected facility will be operated and in no case later than 180 days after the initial startup of a new emission source.

The limited use of natural gas during maintenance firings and break-in firings does not constitute operation and does not require stack testing.

E. The following requirements are applicable to Unit #4 during the period March 1 to October 1 inclusive:

I. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

Pollutant	grains/dscf	ppmdv (3% O ₂)
68°F, 29.92 in Hg		
2. Unit #4		
(i) PM ₁₀ filterable	0.029	
(ii) NO _x *		[384]*

*NO_x emissions from Unit #4 are limited to the more stringent limit in Part H.12.k.i.

II. If the units operated during the months specified above, stack testing to show compliance with the emission limitations in H.2.h.i.E.I shall be performed as follows for the following air contaminants:

Pollutant	Test Frequency
1. PM ₁₀	every year
2. NO _x	every year

The limited use of natural gas during maintenance firings and break-in firings does not constitute operation and does not require stack testing.

F. The sulfur content of any fuel burned shall not exceed 0.66 lb of sulfur per million BTU per test.

- I. Coal increments will be collected using ASTM 2234, Type I conditions A, B, or C and systematic spacing.
 - II. Percent sulfur content and gross calorific value of the coal on a dry basis will be determined for each gross sample using ASTM D methods 2013, 3177, 3173, and 2015.
 - III. KUC shall measure at least 95% of the required increments in any one month that coal is burned in Unit #4.
- ii. Tailings Impoundment
- A. No more than 50 contiguous acres or more than 5% of the total tailings area shall be permitted to have the potential for wind erosion.
 - I. Wind erosion potential is the area that is not wet, frozen, vegetated, crusted, or treated and has the potential for wind erosion.
 - II. KUC shall conduct wind erosion potential grid inspections monthly between February 15 and November 15. The results of the inspections shall be used to determine wind erosion potential.
 - III. If KUC or the Director of Utah Division of Air Quality (Director) determines that the percentage of wind erosion potential is exceeded, KUC shall meet with the Director, to discuss additional or modified fugitive dust controls/operational practices, and an implementation schedule for such, within five working days following verbal notification by either party.
 - B. If between February 15 and November 15 KUC's daily weather forecast using surrounding area meteorological data is for a wind event (a wind event is defined as wind gusts exceeding 25 mph for more than one hour) the procedures listed below shall be followed within 48 hours of issuance of the forecast. KUC shall:
 - I. Alert the Utah Division of Air Quality promptly.
 - II. Continue surveillance and coordination of appropriate measures.
 - C. KUC is subject to the requirements of the most recent federally approved Fugitive Emissions and Fugitive Dust rules.

i. Kennecott Utah Copper (KUC): Smelter & Refinery

i. Smelter

A Emissions to the atmosphere from the indicated emission points shall not exceed the following rates and concentrations:

I. Main Stack (Stack No. 11)

1. PM₁₀
 - a. 89.5 lbs/hr (filterable)
 - b. 439 lbs/hr (filterable + condensable)
2. SO₂
 - a. 552 lbs/hr (3 hr. rolling average)
 - b. 422 lbs/hr (daily average)
3. NO_x
 - a. 154 lbs/hr (daily average)

II. Holman Boiler

1. NO_x
 - a. 14.0 lbs/hr (calendar -day average)

B. Stack testing to show compliance with the emissions limitations of Condition (A) above shall be performed as specified below:

Emission Point	Pollutant	Test Frequency
I. Main Stack (Stack No. 11)	PM ₁₀	every year
	SO ₂	CEM
	NO _x	CEM
II. Holman Boiler	NO _x	every <u>three</u> years & CEMS or alternate method according to NSPS standards

C. KUC must operate and maintain the air pollution control equipment and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

ii. Refinery:

- A. Emissions to the atmosphere from the indicated emission point shall not exceed the following rate:

Emission Point	Pollutant	Maximum Emission Rate
The sum of two (Tankhouse) Boilers	NO _x	9.5 lbs/hr
Combined Heat Plant	NO _x	5.96 lbs/hr

- B. Stack testing to show compliance with the above emission limitations shall be performed as follows:

Emission Point	Pollutant	Testing Frequency
Tankhouse Boilers	NO _x	every <u>three years*</u>
Combined Heat Plant	NO _x	every year

*Stack testing shall be performed on boilers that have operated at least 300 hours during a three-year period.

- C. KUC must operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

j. PacifiCorp Energy: Gadsby Power Plant

i. Steam Generating Unit #1:

A. Emissions of NO_x shall be no greater than 179 lbs/hr on a three (3) hour block average basis.

B. Emissions of NO_x shall not exceed 336 ppmvd (@ 3% O₂, dry)

C. The owner/operator shall install, certify, maintain, operate, and quality-assure a CEM consisting of NO_x and O₂ monitors to determine compliance with the NO_x limitation. The CEM shall operate as outlined in IX.H.1.f.

ii. Steam Generating Unit #2:

A. Emissions of NO_x shall be no greater than 204 lbs/hr on a three (3) hour block average basis.

B. Emissions of NO_x shall not exceed 336 ppmvd (@ 3% O₂, dry)

C. The owner/operator shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_x and O₂ monitors to determine compliance with the NO_x limitation.

iii. Steam Generating Unit #3:

A. Emissions of NO_x shall be no greater than

I. 142 lbs/hr on a three (3) hour block average basis, applicable between November 1 and February 28/29

II. 203 lbs/hr on a three (3) hour block average basis, applicable between March 1 and October 31.

III. Emissions of NO_x shall not exceed 168 ppmvd (@ 3% O₂, dry), applicable between November 1 and February 28/29.

C. The owner/operator shall install, certify, maintain, operate, and quality-assure a CEM consisting of NO_x and O₂ monitors to determine compliance with the NO_x limitation. The CEM shall operate as outlined in IX.H.1.f.

iv. Steam Generating Units #1-3:

A. The owner/operator shall use only natural gas as a primary fuel and No. 2 fuel oil or better as back-up fuel in the boilers. The No. 2 fuel oil may be used only during periods of natural gas curtailment and for maintenance firings. Maintenance firings shall not exceed one-percent of the annual plant Btu requirement. In addition, maintenance firings shall be scheduled between April 1 and November 30 of any calendar year. Records of fuel oil use shall be kept and they shall show the date the fuel oil was fired, the duration in hours the fuel oil was fired, the amount of fuel oil consumed during each curtailment, and the

reason for each firing.

v. Natural Gas-fired Simple Cycle, Catalytic-controlled Turbine Units:

- A. Total emissions of NO_x from all three turbines shall be no greater than 600 lbs/day. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.
- B. Emissions of NO_x from each turbine stack shall not exceed 5 ppmvd (@ 15% O₂, dry). Emissions shall be calculated on a 30-day rolling average. This limitation applies to steady state operation, not including startup and shutdown.
- C. The owner/operator shall install, certify, maintain, operate, and quality-assure a CEM consisting of NO_x and O₂ monitors to determine compliance with the NO_x limitation. The CEM shall operate as outlined in IX.H.1.f.

vi. Combustion Turbine Startup / Shutdown Emission Minimization Plan

- A. Startup begins when the fuel valves open and natural gas is supplied to the combustion turbines
- B. Startup ends when either of the following conditions is met:
- I. The NO_x water injection pump is operational, the dilution air temperature is greater than 600°F, the stack inlet temperature reaches 570°F, the ammonia block valve has opened and ammonia is being injected into the SCR and the unit has reached an output of ten (10) gross MW; or
- II. The unit has been in startup for two (2) hours.
- C. Unit shutdown begins when the unit load or output is reduced below ten (10) gross MW with the intent of removing the unit from service.
- D. Shutdown ends at the cessation of fuel input to the turbine combustor.
- E. Periods of startup or shutdown shall not exceed two (2) hours per combustion turbine per day.
- F. Turbine output (turbine load) shall be monitored and recorded on an hourly basis with an electrical meter.

1 k. Tesoro Refining & Marketing Company

2
3 i. Source-wide PM₁₀ Cap

4 No later than January 1, 2019, combined emissions of PM₁₀ shall not exceed 2.25 tons
5 per day (tpd).

6
7 A. Setting of emission factors:

8
9 The emission factors derived from the most current performance test shall be
10 applied to the relevant quantities of fuel combusted. Unless adjusted by
11 performance testing as discussed in IX.H.2.k.i.B below, the default emission factors
12 to be used are as follows:

13
14 Natural gas:

15 Filterable PM₁₀: 0.0019 lb/MMBtu

16 Condensable PM₁₀: 0.0056 lb/MMBtu

17
18 Plant gas:

19 Filterable PM₁₀: 0.0019 lb/MMBtu

20 Condensable PM₁₀: 0.0056 lb/MMBtu

21
22 Fuel Oil: The PM₁₀ emission factor shall be determined from the latest edition of
23 AP-42 or other EPA-approved methods.

24
25 Cooling Towers: The PM₁₀ emission factor shall be determined from the latest
26 edition of AP-42 or other EPA-approved methods.

27
28 FCC Wet Scrubber:

29 The PM₁₀ emission factors shall be based on the most recent stack test and
30 verified by parametric monitoring as outlined in IX.H.1.g.i.B.III

31
32 Where mixtures of fuel are used in a Unit, the above factors shall be
33 weighted according to the use of each fuel.

34
35 B. The default emission factors listed in IX.H.2.k.i.A above apply until such time as
36 stack testing is conducted as provided in IX.H.1.e or as outlined below:

37
38 Initial PM₁₀ stack testing on the FCC wet gas scrubber stack shall be conducted no
39 later than January 1, 2019 and at least [~~annually~~]once every three (3) years
40 thereafter. Stack testing shall be performed as outlined in IX.H.1.e.

41
42 Results from any stack testing performed at any other PM₁₀ sources in accordance
43 with IX.H.1.e shall be used where available.

44
45 C. Compliance with the Source-wide PM₁₀ Cap shall be determined for each
46 day as follows:

Total 24-hour PM₁₀ emissions for the emission points shall be calculated by adding the daily results of the PM₁₀ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the cooling towers and wet scrubber to arrive at a combined daily PM₁₀ emission total. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The emissions for each emitting unit shall be calculated by multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each fuel combusted at each affected unit by the associated emission factor and summing the results.

ii. Source-wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 2.3 tons per day (tpd) and 475 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.2.k.ii.B below, the default emission factors to be used are as follows:

Natural gas/refinery fuel gas combustion using: Low NO_x burners (LNB): 0.051 lbs/MMbtu

Ultra-Low NO_x (ULNB) burners: 0.04 lbs/MMbtu

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

B. The default emission factors listed in IX.H.2.k.ii.A above apply until such time as stack testing is conducted as provided in IX.H.1.e or as outlined below:

Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment above 100 MMBtu/hr has already been performed and shall be conducted at least [annually]once every three (3) years following the date of the last test. At that time a new flow-weighted average emission factor in terms of: lbs/MMbtu shall be derived. Stack testing shall be performed as outlined in IX.H.1.e. Stack testing is not required for natural gas/refinery fuel gas combustion equipment with a NO_x CEMS.

1 C. Compliance with the source-wide NO_x Cap shall be determined for each
2 day as follows:

3
4 Total 24-hour NO_x emissions shall be calculated by adding the emissions for each
5 emitting unit. The emissions for each emitting unit shall be calculated by
6 multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each
7 fuel combusted at each affected unit by the associated emission factor, and
8 summing the results.

9
10 A NO_x CEM shall be used to calculate daily NO_x emissions from the FCCU wet
11 gas scrubber stack. Emissions shall be determined by multiplying the nitrogen
12 dioxide concentration in the flue gas by the flow rate of the flue gas. The NO_x
13 concentration in the flue gas shall be determined by a CEM as outlined in IX.H.1.f.

14
15 Daily natural gas and plant gas consumption shall be determined through the
16 use of flow meters.

17
18 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
19 tanks that supply combustion sources.

20
21 For purposes of this subsection a "day" is defined as a period of 24-hours
22 commencing at midnight and ending at the following midnight.

23
24 Results shall be tabulated for each day, and records shall be kept which include
25 the meter readings (in the appropriate units) and the calculated emissions.

26
27 iii. Source-wide SO₂ Cap

28 No later than January 1, 2019, combined emissions of SO₂ shall not exceed 3.8 tons per
29 day (tpd) and 300 tons per rolling 12-month period.

30
31 A. Setting of emission factors:

32
33 The emission factors derived from the most current performance test shall be
34 applied to the relevant quantities of fuel combusted. The default emission factors to
35 be used are as follows:

36
37 Natural gas: EF = 0.0006 lb/MMBtu

38 Propane: EF = 0.0006 lb/MMBtu

39 Diesel fuel: shall be determined from the latest edition of AP-42

40
41 Plant fuel gas: the emission factor shall be calculated from the H₂S
42 measurement or from the SO₂ measurement obtained by direct
43 testing/monitoring.

44
45 Where mixtures of fuel are used in a unit, the above factors shall be weighted
46 according to the use of each fuel.

1
2 B. Compliance with the source-wide SO₂ Cap shall be determined for each day as
3 follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂
4 emissions for natural gas, plant fuel gas, and propane combustion to those from the
5 wet gas scrubber stack, and SRU.

6
7 Daily SO₂ emissions from the FCCU wet gas scrubber stack shall be determined
8 by multiplying the SO₂ concentration in the flue gas by the flow rate of the flue
9 gas. The SO₂ concentration in the flue gas shall be determined by a CEM as
10 outlined in IX.H.1.f.

11
12 SRUs: The emission rate shall be determined by multiplying the sulfur dioxide
13 concentration in the flue gas by the flow rate of the flue gas. The sulfur dioxide
14 concentration in the flue gas shall be determined by CEM as outlined in IX.H.1.f.

15
16 Daily SO₂ emissions from other affected units shall be determined by multiplying
17 the quantity of each fuel used daily at each affected unit by the appropriate emission
18 factor.

19
20 Daily natural gas and plant gas consumption shall be determined through the
21 use of flow meters.

22
23 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
24 tanks that supply combustion sources.

25
26 Results shall be tabulated for each day, and records shall be kept which include
27 CEM readings for H₂S (averaged for each one-hour period), all meter reading (in
28 the appropriate units), fuel oil parameters (density and wt% sulfur for each day any
29 fuel oil is burned), and the calculated emissions.

30
31 C. Instead of complying with Condition IX.H.1.g.ii.A, sources may reduce the H₂S
32 content of the refinery plant gas to 60 ppm or less or reduce SO₂ concentration
33 from fuel gas combustion devices to 8 ppmvd at 0% O₂ or less as described in 40
34 CFR 60.102a. Compliance shall be based on a rolling average of 365 days. The
35 owner/operator shall comply with the fuel gas or SO₂ emissions monitoring
36 requirements of 40 CFR 60.107a and the related recordkeeping and reporting
37 requirements of 40 CFR 60.108a. As used herein, refinery "plant gas" shall have
38 the meaning of "fuel gas" as defined in 40 CFR 60.101a, and may be used
39 interchangeably.

40
41 iv. SO₂ emissions from the SRU/TGTU/TGI shall be limited to:

42
43 B. 1.68 tons per day (tpd) for up to 21 days per rolling 12-month period, and

44
45 C. 0.69 tpd for the remainder of the rolling 12-month period.

D. Daily sulfur dioxide emissions from the SRU/TGI/TGTU shall be determined by multiplying the SO₂ concentration in the flue gas by the mass flow of the flue gas. The sulfur dioxide concentration in the flue gas shall be determined by CEM as outlined in IX.H.1.f

v. Emergency and Standby Equipment

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

vi. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
FCCU / CO Boiler	Wet Gas Scrubber, LoTOx
Furnace F-1	Ultra Low NOx Burners
Tanks	Tank Degassing Controls
North and South Flares	Flare Gas Recovery
Furnace H-101	Ultra Low NOx Burners
Truck loading rack	Vapor recovery unit
Sulfur recovery unit	Tail Gas Treatment Unit
API separator	Floating roof (single seal)

1. University of Utah: University of Utah Facilities

- i. Emissions to the atmosphere from the listed emission points in Building 303 shall not exceed the following concentrations:

Emission Point	Pollutant	ppmdv (3% O ₂ dry)
A. Boiler #4*	NO _x	187
B. Boilers #6 & #7.	NO _x	9
C. Boilers #9*.	NO _x	9
D. Turbine	NO _x	9
E. Turbine and WHRU Duct burner	NO _x	15

*By December 31, 2019, Boiler #4 will be decommissioned and Boiler #9 will be installed and operational.

- ii. Testing to show compliance with the emissions limitations of Condition i above shall be performed as specified below:

Emission Point	Pollutant	Initial Test	Test Frequency
A. Boiler #4	NO _x	*	[every year]#
B. Boilers #6 & #7	NO _x	2018	[every year]#
C. Boilers #9	NO _x	2020	[every year]#
D. Turbine	NO _x	*	[every year]#
E. Turbine and WHRU Duct burner	NO _x	*	[every year]#

* Initial tests have been performed and the next method test using EPA approved test methods shall be performed [annually]within three (3) years of the last stack test.

A compliance test shall be performed at least once [annually]every three years from the date of the last compliance test that demonstrated compliance with the emission limit(s). Compliance testing shall be performed using EPA approved test methods acceptable to the Director. The Director shall be notified, in

1 accordance with all applicable rules, of any compliance test that is to be
2 performed. Beginning January 2018, annual screening with a portable monitor
3 must be conducted in those years that a compliance test is not performed.
4 Screening with a portable monitor shall be performed in accordance with the
5 portable monitor manufacturer's specifications. If screening with a portable
6 monitor indicates a potential exceedance of the concentration limit, a
7 compliance test must be performed within 90 days of that screening. Records
8 shall be kept on site which indicate the date, time, and results of each screening
9 and demonstrate that the portable monitor was operated in accordance with
10 manufacturer's specifications.
11
12

- 1 m. Utah Municipal Power Association: West Valley Power Plant.
2
3 i. Total emissions of NO_x from all five (5) turbines combined shall be no greater than
4 1050 lb of NO_x on a daily basis. For purposes of this subpart, a "day" is defined as a
5 period of 24- hours commencing at midnight and ending at the following midnight.
6
7 ii. Emissions of NO_x shall not exceed 5ppmdv (@ 15% O₂, dry) on a 30-day rolling
8 average.
9
10 iii. Total emissions of NO_x from all five (5) turbines shall include the sum of all periods in
11 the day including periods of startup, shutdown, and maintenance.
12
13 iv. The NO_x emission rate (lb/hr) shall be determined by CEM. The CEM shall
14 operate as outlined in IX.H.1.f

H.4 Interim Emission Limits and Operating Practices

- a. The terms and conditions of this Subsection IX.H.4 shall apply to the sources listed in this section on a temporary basis, as a bridge between the 1991 PM₁₀ State Implementation Plan and this PM₁₀ Maintenance Plan. For all other point sources listed in IX.H.2 and IX.H.3 the limits apply upon approval by the Utah Air Quality Board of the PM₁₀ Maintenance Plan. These bridge requirements are needed to impose limits on the sources that have time delays for implementation of controls. During this timeframe, the sources listed in this section may not meet the established limits listed in IX.H.1 and IX.H.2. As the control technology for the sources listed in this section is installed and operational, the terms and conditions listed in IX.H.1 and IX.H.2 become applicable and those limits replace the limits in this subsection. In no case, shall the terms and conditions listed in this Subsection IX.H.4 extend beyond January 1, 2019.

b. Petroleum Refineries:

- i. All petroleum refineries in or affecting the PM₁₀ nonattainment/maintenance area shall, for the purpose of this PM₁₀ Maintenance Plan:

A. Achieve an emission rate equivalent to no more than 9.8 kg of SO₂ per 1,000 kg of coke burn- off from any Catalytic Cracking unit by use of low-SO_x catalyst or equivalent emission reduction techniques or procedures, including those outlined in 40 CFR 60, Subpart J. Unless otherwise specified in IX.H.2, compliance shall be determined for each day based on a rolling seven-day average.

B. Compliance Demonstrations.

- I. Compliance with the maximum daily (24-hr) plant-wide emission limitations for PM₁₀, SO₂, and NO_x shall be determined by adding the calculated emission estimates for all fuel burning process equipment to those from any stack-tested or CEM-measured source components. NO_x and PM₁₀ emission factors shall be determined from AP-42 or from test data.

For SO_x, the emission factors are:

Natural gas: EF = 0.60 lb/MMscf

Propane: EF = 0.60 lb/MMscf

Plant gas: the emission factor shall be calculated from the H₂S measurement required in IX.H.1.g.ii.A.

Fuel oils (when permitted): The emission factor shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or EPA-approved equivalent, and the density of the fuel oil, as follows:

$$EF \text{ (lb SO}_2\text{/k gal)} = \text{density (lb/gal)} * (1000 \text{ gal/k gal)} * \text{wt.\% S}/100 * (64 \text{ lb SO}_2\text{/32 lb S})$$

Where mixtures of fuel are used in an affected unit, the above factors shall be weighted according to the use of each fuel.

- 1
2 II. Daily emission estimates for stack-tested source components shall be made by
3 multiplying the latest stack-tested hourly emission rate times the logged hours
4 of operation (or other relevant parameter) for that source component for each
5 day. This shall not preclude a source from determining emissions through the
6 use of a CEM that meets the requirements of R307-170.

c. Big West Oil Company

i. PM₁₀ Emissions

A. Combined emissions of filterable PM₁₀ from all external combustion process equipment shall not exceed the following:

I. 0.377 tons per day, between October 1 and March 31;

II. 0.407 tons per day, between April 1 and September 30.

B. Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

The daily primary PM₁₀ contribution from the Catalyst Regeneration System shall be calculated using the following equation:

$$\text{Emitted PM}_{10} = (\text{Feed rate to FCC in kbbbl/time}) * (22 \text{ lbs/kbbbl})$$

wherein the emission factor (22 lbs/kbbbl) may be re-established by stack testing.

Total 24-hour PM₁₀ emissions shall be calculated by adding the daily emissions from the external combustion process equipment to the estimate for the Catalyst Regeneration System.

ii. SO₂ Emissions

A. Combined emissions of sulfur dioxide from all external combustion process equipment shall not exceed the following:

I. 2.764 tons/day, between October 1 and March 31;

II. 3.639 tons/day, between April 1 and September 30.

B. Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

The daily SO₂ emission from the Catalyst Regeneration System shall be calculated using the following equation:

$$\text{SO}_2 = [43.3 \text{ lb SO}_2/\text{hr} / 7,688 \text{ bbl feed/day}] \times [(\text{operational feed rate in bbl/day}) \times (\text{wt\% sulfur in feed} / 0.1878 \text{ wt\%}) \times (\text{operating hr/day})]$$

The FCC feed weight percent sulfur concentration shall be determined by the refinery laboratory every 30 days with one or more analyses. Alternatively, SO₂ emissions from the Catalyst Regeneration System may be determined using a Continuous Emissions Monitor (CEM) in accordance with IX.H.1.f.

Emissions from the SRU Tail Gas Incinerator (TGI) shall be determined for each day by multiplying the sulfur dioxide concentration in the flue gas by the mass flow of the flue gas.

Total 24-hour SO₂ emissions shall be calculated by adding the daily emissions from the external combustion process equipment to the values for the Catalyst Regeneration System and the SRU.

iii. NO_x Emissions

A. Combined emissions of NO_x from all external combustion process equipment shall not exceed the following:

I. 1.027 tons per day, between October 1 and March 31;

II. 1.145 tons per day, between April 1 and September 30.

B. Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

The daily NO_x emission from the Catalyst Regeneration System shall be calculated using the following equation:

$$\text{NO}_x = (\text{Flue Gas, moles/hr}) \times (180 \text{ ppm} / 1,000,000) \times (30.006 \text{ lb/mole}) \times (\text{operating hr/day})$$

wherein the scalar value (180 ppm) may be re-established by stack testing. Alternatively, NO_x emissions from the Catalyst Regeneration System may be determined using a Continuous Emissions Monitor (CEM) in accordance with IX.H.1.f.

Total 24-hour NO_x emissions shall be calculated by adding the daily emissions from gas-fired compressor drivers and the external combustion process equipment to the value for the Catalyst Regeneration System.

d. Chevron Products Company

i. PM₁₀ Emissions

- A. Combined emissions of filterable PM₁₀ from all external combustion process equipment shall be no greater than 0.234 tons per day.

Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

ii. SO₂ Emissions

- A. Combined emissions of sulfur dioxide from gas-fired compressor drivers and all external combustion process equipment, including the FCC CO Boiler and Catalyst Regenerator, shall not exceed 0.5 tons/day.

Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

Alternatively, SO₂ emissions from the FCC CO Boiler and Catalyst Regenerator may be determined using a Continuous Emissions Monitor (CEM) in accordance with IX.H.1.f.

iii. NO_x Emissions

- A. Combined emissions of NO_x from gas-fired compressor drivers and all external combustion process equipment, including the FCC CO Boiler and Catalyst Regenerator and the SRU Tail Gas Incinerator, shall be no greater than 2.52 tons per day.

Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

Alternatively, NO_x emissions from the FCC CO Boiler and Catalyst Regenerator may be determined using a Continuous Emissions Monitor (CEM) in accordance with IX.H.1.f.

- 1
 - 2
- iv. Chevron shall be permitted to combust HF alkylation polymer oil in its Alkylation unit.

1 e. Holly Refining and Marketing Company

2
3 i. PM₁₀ Emissions

4
5 A. Combined emissions of filterable PM₁₀ from all combustion sources, shall be no
6 greater than 0.44 tons per day.

7
8 Emissions shall be determined for each day by multiplying the appropriate emission
9 factor from section IX.H.4.b.i.B, or from testing as described below, by the relevant
10 parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each
11 affected unit, and summing the results for the group of affected units.

12
13 ii. SO₂ Emissions

14
15 A. Combined emissions of SO₂ from all sources shall be no greater than 4.714 tons per
16 day.

17
18 Emissions shall be determined for each day by multiplying the appropriate emission
19 factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation,
20 feed rate, or quantity of fuel combusted) at each affected unit, and summing the
21 results for the group of affected units.

22
23 Emissions from the FCC wet scrubbers shall be determined using a Continuous
24 Emissions Monitor (CEM) in accordance with IX.H.1.f.

25
26 iii. NO_x Emissions:

27
28 A. Combined emissions of NO_x from all sources shall be no greater than 2.20 tons per
29 day.

30
31 Emissions shall be determined for each day by multiplying the appropriate emission
32 factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation,
33 feed rate, or quantity of fuel combusted) at each affected unit, and summing the
34 results for the group of affected units.

f. Tesoro Refining & Marketing Company

i. PM₁₀ Emissions

- A. Combined emissions of filterable PM₁₀ from gas-fired compressor drivers and all external combustion process equipment, including the FCC/CO Boiler (ESP), shall be no greater than 0.261 tons per day.

Emissions for gas-fired compressor drivers and the group of external combustion process equipment shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

ii. SO₂ Emissions

- A. Combined emissions of SO₂ from gas-fired compressor drivers and all external combustion process equipment, including the FCC/CO Boiler (ESP), shall not exceed the following:

I. November 1 through end of February: 3.699 tons/day.

II. . March 1 through October 31: 4.374 tons/day.

Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for the group of affected units.

Emissions from the ESP stack (FCC/CO Boiler) shall be determined by multiplying the SO₂ concentration in the flue gas by the mass flow of the flue gas.

The SO₂ concentration in the flue gas shall be determined by a continuous emission monitor (CEM).

iii. NO_x Emissions

- A. Combined emissions of NO_x from gas-fired compressor drivers and all external combustion process equipment shall be no greater than 1.988 tons per day.

Emissions shall be determined for each day by multiplying the appropriate emission factor from section IX.H.4.b.i.B by the relevant parameter (e.g. hours of operation, feed rate, or quantity of fuel combusted) at each affected unit, and summing the results for

1 the group of affected units.

H.11. General Requirements: Control Measures for Area and Point Sources, Emission Limits and Operating Practices, PM_{2.5}

- a. Except as otherwise outlined in individual conditions of this Subsection IX.H.11 listed below, the terms and conditions of this Subsection IX.H.11 shall apply to all sources subsequently addressed in Subsection IX.H.12 and 13. Should any inconsistencies exist between these subsections, the source specific conditions listed in IX.H.12 and 13 shall take precedence.
- b. Definitions:
 - i. The definitions contained in R307-101-2, Definitions, apply to Section IX, Part H.
 - ii. Natural gas curtailment means a period of time during which the supply of natural gas to an affected facility is halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas does not constitute a period of natural gas curtailment.
- c. Recordkeeping and Reporting:
 - i. Any information used to determine compliance shall be recorded for all periods when the source is in operation, and such records shall be kept for a minimum of five years. Any or all of these records shall be made available to the Director upon request.
 - ii. Each source shall comply with all applicable sections of R307-150 Emission Inventories. iii. Each source shall submit a report of any deviation from the applicable requirements of this Subsection IX.H, including those attributable to upset conditions, the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be submitted to the Director no later than 24-months following the deviation or earlier if specified by an underlying applicable requirement. Deviations due to breakdowns shall be reported according to the breakdown provisions of R307-107.
- d. Emission Limitations:
 - i. All emission limitations listed in Subsections IX.H.12 and IX.H.13 apply at all times, unless otherwise specified in the source specific conditions listed in IX.H.12 and 13.
 - ii. All emission limitations of particulate matter (PM_{2.5}) listed in Subsections IX.H.12 and IX.H.13 include both filterable PM_{2.5} and condensable PM, unless otherwise specified in the source specific conditions listed in IX.H.12 and IX.H.13.
- e. Stack Testing:

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- i. As applicable, stack testing to show compliance with the emission limitations for the sources in Subsection IX.H.12 and 13 shall be performed in accordance with the following:
 - A. Sample Location: The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other EPA-approved testing methods acceptable to the Director. Occupational Safety and Health Administration (OSHA) approvable access shall be provided to the test location.
 - B. Volumetric Flow Rate: 40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators" or other EPA-approved testing methods acceptable to the Director.
 - C. PM: 40 CFR 60, Appendix A, Methods 5, 5b, 5f, 17 or other EPA approved testing methods acceptable to the Director.
 - D. PM_{2.5}: 40 CFR 51, Appendix M, 201a and 202, or other EPA approved testing methods acceptable to the Director. The back half condensables shall be used for compliance demonstration as well as for inventory purposes. If a method other than 201a is used, the portion of the front half of the catch considered PM_{2.5} shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.
 - E. SO₂: 40 CFR 60 Appendix A, Method 6C, or other EPA-approved testing methods acceptable to the Director.
 - F. NO_x: 40 CFR 60 Appendix A, Method 7E, or other EPA-approved testing methods acceptable to the Director.
 - G. VOC: 40 CFR 60 Appendix A, Method 25A or other EPA-approved testing methods acceptable to the Director.
 - H. Calculations: To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors to give the results in the specified units of the emission limitation.
 - I. A stack test protocol shall be provided at least 30 days prior to the test. A pretest conference shall be held if directed by the Director.
 - J. The production rate during all compliance testing shall be no less than 90% of the maximum production rate achieved in the previous three (3) years. If the desired production rate is not achieved at the time of the test, the maximum production rate shall be 110% of the tested achieved rate, but not more than the maximum allowable production rate. This new allowable maximum production rate shall remain in effect until successfully tested at a higher rate. The owner/operator shall request a higher

production rate when necessary. Testing at no less than 90% of the higher rate shall be conducted. A new maximum production rate (110% of the new rate) will then be allowed if the test is successful. This process may be repeated until the maximum allowable production rate is achieved.

f. Continuous Emission and Opacity Monitoring

i. For all continuous monitoring devices, the following shall apply:

A. Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in R307-170 and 40 CFR 60.13. Flow measurement shall be in accordance with the requirements of 40 CFR 52, Appendix E; 40 CFR 60 Appendix B; or 40 CFR 75, Appendix A.

B. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 13; and 40 CFR 60, Appendix B – Performance Specifications.

ii. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

g. Petroleum Refineries.

i. Limits at Fluid Catalytic Cracking Units

A. FCCU SO₂ Emissions

I. Each owner or operator of an FCCU shall comply with an SO₂ emission limit of 25 ppmvd @ 0% excess air on a 365-day rolling average basis and 50 ppmvd @ 0% excess air on a 7-day rolling average basis.

II. Compliance with this limit shall be determined ~~[by following 40 C.F.R. §60.105a(g)]~~ using a CEM in accordance with IX.H.11.f.

B. FCCU PM Emissions

I. Each owner or operator of an FCCU shall comply with an emission limit of 1.0 pounds PM per 1000 pounds coke burn-off.

II. Compliance with this limit shall be determined by following the stack test protocol specified in 40 C.F.R. §60.106(b) to measure PM emissions on the FCCU. Each owner operator shall conduct stack tests ~~[annually]~~ once every three (3) years at each FCCU.

1
2 III. No later than January 1, 2019, each owner or operator of an FCCU subject to
3 NSPS Ja shall install, operate and maintain a continuous parameter monitor
4 system (CPMS) to measure and record operating parameters from the FCCU and
5 control devices as per the requirements of 40 CFR 60.105a(b)(1). No later than
6 January 1, 2019, each owner or operator of an FCCU not subject to NSPS Ja
7 shall install, operate and maintain a continuous opacity monitoring system to
8 measure and record opacity from the FCCU as per the requirements of 40 CFR
9 63.1572(b) and comply with the opacity limitation as per the requirements of
10 Table 7 to Subpart UUU of Part 63[for determination of source-wide PM_{2.5}
11 emissions as per the requirements of 40 CFR 60.105a(b)(1)].
12

13 ii. Limits on Refinery Fuel Gas
14

15 A. All petroleum refineries in or affecting any PM_{2.5} nonattainment area or any PM₁₀
16 nonattainment or maintenance area shall reduce the H₂S content of the refinery plant
17 gas to 60 ppm or less as described in 40 CFR 60.102a. Compliance shall be based
18 on a rolling average of 365 days. The owner/operator shall comply with the fuel gas
19 monitoring requirements of 40 CFR 60.107a and the related recordkeeping and
20 reporting requirements of 40 CFR 60.108a. As used herein, refinery “plant gas”
21 shall have the meaning of “fuel gas” as defined in 40 CFR 60.101a, and may be
22 used interchangeably.
23

24 B. For natural gas, compliance is assumed while the fuel comes from a public utility.
25

26 iii. Limits on Heat Exchangers
27

28 A. Each owner or operator shall comply with the requirements of 40 CFR 63.654
29 for heat exchange systems in VOC service. The owner or operator may elect to
30 use another EPA-approved method other than the Modified El Paso Method if
31 approved by the Director.
32

33 I. The following applies in lieu of 40 CFR 63.654(b): A heat exchange system is
34 exempt from the requirements in paragraphs 63.654(c) through (g) of this
35 section if it meets any one of the criteria in the following paragraphs (1)
36 through (2) of this section.

37
38 1. All heat exchangers that are in VOC service within the heat exchange
39 system that either:
40

41 a. Operate with the minimum pressure on the cooling water side at
42 least 35 kilopascals greater than the maximum pressure on the
43 process side; or
44

45 b. Employ an intervening cooling fluid, containing less than 10 percent by
46 weight of VOCs, between the process and the cooling water. This

1 intervening fluid must serve to isolate the cooling water from the process
2 fluid and must not be sent through a cooling tower or discharged. For
3 purposes of this section, discharge does not include emptying for
4 maintenance purposes.
5

- 6 2. The heat exchange system cools process fluids that contain less than 10
7 percent by weight VOCs (i.e., the heat exchange system does not contain
8 any heat exchangers that are in VOC service).
9

10 iv. Leak Detection and Repair Requirements
11

- 12 A. Each owner or operator shall comply with the requirements of 40 CFR 60.590a to
13 60.593a as soon as practicable.
14
15 B. For units complying with the Sustainable Skip Period, previous process unit
16 monitoring results may be used to determine the initial skip period interval
17 provided that each valve has been monitored using the 500 ppm leak definition.
18

19 v. Requirements on Hydrocarbon Flares
20

- 21 A. All hydrocarbon flares at petroleum refineries located in or affecting a PM_{2.5}
22 nonattainment area or any PM₁₀ nonattainment or maintenance area shall be
23 subject to the flaring requirements of NSPS Subpart Ja (40 CFR 60.100a–109a), if
24 not already subject under the flare applicability provisions of Ja.
25
26 B. No later than January 1, 2019, all major source petroleum refineries in or affecting
27 any PM_{2.5} nonattainment area or any PM₁₀ nonattainment or maintenance area
28 shall either 1) install and operate a flare gas recovery system designed to limit
29 hydrocarbon flaring produced from each affected flare during normal operations to
30 levels below the values listed in 40 CFR 60.103a(c), or 2) limit flaring during
31 normal operations to 500,000 scfd for each affected flare. Flare gas recovery is not
32 required for dedicated SRU flare and header systems, or HF flare and header
33 systems.
34

35 vi. Requirements on Tank Degassing
36

- 37 A. Beginning January 1, 2017, the owner or operator of any stationary tank of 40,000-
38 gallon or greater capacity and containing or last containing any organic liquid, with
39 a true vapor pressure equal or greater than 10.5 kPa (1.52 psia) at storage
40 temperature (see R307-324-4(1)) shall not allow it to be opened to the atmosphere
41 unless the emissions are controlled by exhausting VOCs contained in the tank
42 vapor-space to a vapor control device until the organic vapor concentration is 10
43 percent or less of the lower explosion limit (LEL).
44
45 B. These degassing provisions shall not apply while connecting or disconnecting
46 degassing equipment.

1
2 C. The Director shall be notified of the intent to degas any tank subject to the rule.
3 Except in an emergency situation, initial notification shall be submitted at least
4 three (3) days prior to degassing operations. The initial notification shall include:

5
6 I. Start date and time;

7
8 II. Tank owner, address, tank location, and applicable tank permit numbers;

9
10 III. Degassing operator's name, contact person, telephone number;

11
12 IV. Tank capacity, volume of space to be degassed, and materials stored;

13
14 V. Description of vapor control device.

15
16 vii. No Burning of Liquid Fuel Oil in Stationary Sources
17

18 A. No petroleum refineries in or affecting any PM_{2.5} nonattainment area or PM₁₀
19 nonattainment or maintenance area shall be allowed to burn liquid fuel oil in
20 stationary sources except during natural gas curtailments or as specified in the
21 individual subsections of Section IX, Part H.

22
23 B. The use of diesel fuel meeting the specifications of 40 CFR 80.510 in standby or
24 emergency equipment is exempt from the limitation of IX.H.11.g.vii.A above.

25
26 h. Catalytic Oxidation for VOC Control
27

28 i. Internal Combustion Engines
29

30 A. Emissions from each VOC catalytic-controlled IC engine shall be routed through the
31 oxidation catalyst system prior to being emitted to the atmosphere. The oxidation
32 catalyst system shall be installed and operated as outlined in 40 CFR 63.6625(e).

33
34 ii. Natural Gas Combustion Turbines
35

36 A. Emissions from each VOC catalytic-controlled combustion turbine shall be routed
37 through the oxidation catalyst system prior to being emitted to the atmosphere. The
38 oxidation catalyst system shall be installed and operated according to the
39 manufacturer's emission-related written instructions and in a manner consistent with
40 good air pollution control practice for minimizing emissions.

H.12. Source-Specific Emission Limitations in Salt Lake City – UT PM_{2.5} Nonattainment Area

a. ATK Launch Systems Inc. Promontory

- i. During the period November 1 to February 28/29 on days when the 24-hour average PM_{2.5} levels exceed 35 µg/m³ at the nearest real-time monitoring station, the open burning of reactive wastes with properties identified in 40 CFR 261.23 (a) (6) (7) (8) may be conducted when the 24-hour average PM_{2.5} levels exceed 35 µg/m³ at the nearest real time monitoring station in limited quantities. Limited quantities, as authorized in the facility's RCRA Subpart X permit, of time sensitive reactive wastes may be open burned when the 24-hour average PM_{2.5} levels exceed 35 µg/m³ at the nearest real-time monitoring station.
- ii. During the period November 1 to February 28/29, on days when the 24-hour average PM_{2.5} levels exceed 35 µg/m³ at the nearest real-time monitoring station, the following shall not be tested:
 - A. Propellant, energetics, pyrotechnics, flares and other reactive compounds greater than 2,400 lbs. per day; or
 - B. Rocket motors less than 1,000,000 lbs. of propellant per motor subject to the following exception:
 - I. A single test of rocket motors less than 1,000,000 lbs. of propellant per motor is allowed on a day when the 24-hour average PM_{2.5} level exceeds 35 µg/m³ at the nearest real-time monitoring station provided notice is given to the Director of the Utah Air Quality Division. No additional tests of rocket motors less than 1,000,000 lbs. of propellant may be conducted during the inversion period until the 24-hour average PM_{2.5} level has returned to a concentration below 35 µg/m³ at the nearest real-time monitoring station.
 - C. During this period, records will be maintained identifying the size of the rocket motors tested and the 24-hour average PM_{2.5} level at the nearest real-time monitoring station on days when motor testing occur.
- iii. Natural Gas-Fired Boilers
 - A. Building M-576
 - I. One 71 MMBTU/hr boiler shall be upgraded with low NO_x burners and flue gas recirculation by January 2016. The boiler shall be rated at a maximum of 9 ppm. The remaining boiler shall not consume more than 100,000 MCF of natural gas per rolling 12- month period unless upgraded so the NO_x emission rate is no greater than 30 ppm.

II. Emissions to the atmosphere from the Cleaver Brooks 71 MMBTU/hr boiler in building M-576 shall not exceed the following concentration:

a. Pollutant	ppmdv (3% O ₂ dry)
NO _x	9

b. Compliance with the above emission limits shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP.

c. Subsequent to initial compliance testing, stack testing is required ~~annually~~ every three years.

B. Building M-14

I. The two 25 MMBTU/hr boiler shall be upgraded with low NO_x burners and flue gas recirculation by December 31, 2024. The boiler shall be rated at a maximum of 9 ppm.

II. Emissions to the atmosphere from the two (2) Cleaver Brooks 25 MMBTU/hr boilers in building M-14 shall not exceed the following concentrations:

a. Pollutant	ppmdv (3% O ₂ dry)
NO _x	9

b. Compliance with the above emission limits shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP.

c. Subsequent to initial compliance testing, stack testing is required ~~annually~~ every three years.

b. Big West Oil Refinery

i. Source-wide PM_{2.5}:

Following installation of the Flue Gas Blow Back Filter (FGF), but no later than January 1, 2019, combined emissions of PM_{2.5} (filterable+condensable) shall not exceed 0.29 tons per day and 72.5 tons per rolling 12-month period. No later than January 1, 2019, Big West Oil shall conduct stack testing to establish the ratio of filterable and condensable PM_{2.5} from the Catalyst Regeneration System.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.b.i.B below, the default emission factors to be used are as follows:

Natural gas:

Filterable PM_{2.5}: 1.9 lb/MMscf

Condensable PM_{2.5}: 5.7 lb/MMscf

Plant gas:

Filterable PM_{2.5}: 1.9 lb/MMscf

Condensable PM_{2.5}: 5.7 lb/MMscf

Fuel Oil: The PM_{2.5} emission factors shall be determined from the latest edition of AP-42 or other EPA-approved methods.

FCC Stacks: The PM_{2.5} emission factors shall be established by stack test.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors [~~for the FCC~~] listed in IX.H.12.b.i.A above apply until such time as stack testing is conducted as provided in IX.H.11.e or as outlined below:

PM_{2.5} stack testing on the FCC shall be performed initially no later than January 1, 2019 and at least [~~annually~~] once every three (3) years thereafter. Stack testing shall be performed as outlined in IX.H.11.e.

C. Compliance with the source-wide PM_{2.5} Cap shall be determined for each day as follows: Total 24-hour PM_{2.5} emissions for the emission points shall be calculated by adding the daily results of the PM_{2.5} emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the FCC to arrive at a combined daily PM_{2.5}

emission total.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily gas consumption shall be measured by meters that can delineate the flow of gas to the boilers, furnaces and the SRU incinerator.

The equation used to determine emissions from these units shall be as follows: Emissions = Emission Factor (lb/MMscf) * Gas Consumption (MMscf/24 hrs)/(2,000 lb/ton)

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The daily PM_{2.5} emissions from the FCC shall be calculated using the following equation: $E = FR * EF$

Where:

E = Emitted PM_{2.5}

FR = Feed Rate to Unit (kbbls/day)

EF = emission factor (lbs/kbbl), established by the most recent stack test

Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 0.80 tons per day (tpd) and 195 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.b.ii.B below, the default emission factors to be used are as follows:

Natural gas: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Plant gas: assumed equal to natural gas

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted

according to the use of each fuel.

- B. The default emission factors [~~for the FCC~~] listed in IX.H.12.b.ii.A above apply until such time as stack testing is conducted as provided in IX.H.11.e or as outlined below:

Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment above 40 MMBtu/hr has been performed NO_x emissions for the FCC are monitored with a continuous emission monitoring system. Refinery Boilers and heaters over 40 MMBtu/hr, but less than 100 MMBtu/hr, are in compliance with monitoring and work practice standards of Subpart DDDD of Part 63.

- C. Compliance with the source-wide NO_x Cap shall be determined for each day as follows: Total 24-hour NO_x emissions shall be calculated by adding the emissions for each emitting unit. The emissions for each emitting unit shall be calculated by multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each fuel combusted at each affected unit by the associated emission factor, and summing the results.

Daily plant gas consumption at the furnaces, boilers and SRU incinerator shall be measured by flow meters. The equations used to determine emissions shall be as follows:

$$\text{NO}_x = \text{Emission Factor (lb/MMscf)} * \text{Gas Consumption (MMscf/24 hrs)} / (2,000 \text{ lb/ton})$$

Where the emission factor is derived from the fuel used, as listed in IX.H.12.b.ii.A above Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The daily NO_x emissions from the FCC shall be calculated using a CEM as outlined in IX.H.11.f

Total daily NO_x emissions shall be calculated by adding the results of the above NO_x equations for natural gas and plant gas combustion to the estimate for the FCC.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

- iii. Source-wide SO₂ Cap

No later than January 1, 2019, combined emissions of SO₂ shall not exceed 0.60 tons per day and 140 tons per rolling 12-month period.

1
2 A. Setting of emission factors:

3 The emission factors derived from the most current performance test shall be
4 applied to the relevant quantities of fuel combusted. The default emission factors
5 to be used are as follows:

6
7 Natural Gas - 0.60 lb SO₂/MMscf gas

8
9 Plant Gas: The emission factor to be used in conjunction with plant gas combustion
10 shall be determined through the use of a CEM as outlined in IX.H.11.f.

11
12 SRUs: The emission rate shall be determined by multiplying the sulfur
13 dioxide concentration in the flue gas by the flow rate of the flue gas. The
14 sulfur dioxide concentration in the flue gas shall be determined by CEM as
15 outlined in IX.H.11.f.

16
17 Fuel oil: The emission factor to be used for combustion shall be calculated based
18 on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or
19 EPA approved equivalent acceptable to the Director, and the density of the fuel
20 oil, as follows:

21
22
$$\text{EF (lb SO}_2\text{/k gal)} = \text{density (lb/gal)} * (1000 \text{ gal/k gal}) * \text{wt. \% S/100} * (64 \text{ lb SO}_2\text{/32}$$

23 lbs)

24
25 Where mixtures of fuel are used in a Unit, the above factors shall be weighted
26 according to the use of each fuel.

27
28 B. Compliance with the source-wide SO₂ Cap shall be determined for each day as
29 follows:

30 Total daily SO₂ emissions shall be calculated by adding the daily SO₂ emissions
31 for natural gas and plant fuel gas combustion, to those from the FCC and SRU
32 stacks.

33
34 The daily SO_x emissions from the FCC shall be calculated using a CEM as outlined
35 in IX.H.11.f

36
37 Daily natural gas and plant gas consumption shall be determined through the use
38 of flow meters.

39
40 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
41 tanks that supply combustion sources.

42
43 For purposes of this subsection a "day" is defined as a period of 24-hours
44 commencing at midnight and ending at the following midnight.
45

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each day), all meter readings (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

iv. Emergency and Standby Equipment

- A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

v. Alternate Startup and Shutdown Requirements

- A. During any day which includes startup or shutdown of the FCCU, combined emissions of SO₂ shall not exceed 1.2 tons per day (tpd). For purposes of this subsection, a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.
- B. The total number of days which include startup or shutdown of the FCCU shall not exceed ten (10) per 12-month rolling period.

vi. ~~Requirements on Hydrocarbon Flares~~

- ~~A. No later than January 1, 2021, routine flaring will be limited to 300,000 scfd for each affected flare.~~

vii. ~~No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:~~

Emission Unit	Control Equipment
FCCU Regenerator	Flue gas blowback "Pall Filter", quaternary cyclones with fabric filter
H-404 #1 Crude Heater	Ultra-low NO _x burners
Refinery Flares	Subpart Ja, and MACT CC flaring standards
SRU	Tail gas incinerator and redundant caustic scrubber
Product Loading Racks	Vapor recovery and vapor combustors
Wastewater Treatment System	API separator fixed cover, carbon adsorber canisters to be installed 2019.

c. Chemical Lime Company (LHoist North America)

Lime Production Kiln

- i. No later than January 1, 2019, or upon source start-up, whichever comes later, SNCR technology shall be installed on the Lime Production Kiln.
 - a. Effective January 1, 2019, or upon source start-up, whichever comes later, NO_x emissions shall not exceed 56 lb/hr. (3-hr rolling average)
 - b. Compliance with the above emissions limit shall be determined by stack testing as outlined in Section IX Part H.11.e of this SIP.
- ii. No later than January 1, 2019, or upon source start-up, whichever comes later, a baghouse control technology shall be installed and operating on the Lime Production Kiln.
 - a. Effective January 1, 2019, or upon source start-up, whichever comes later, PM emissions shall not exceed 0.12 pounds per ton (lb/ton) of stone feed. (3-hr rolling average)
 - b. Effective January 1, 2019, or upon source start-up, whichever comes later, PM_{2.5} (filterable + condensable) emissions shall not exceed 1.5 lbs/ton of stone feed. (3-hr rolling average)
 - c. Compliance with the above emission limits shall be determined by stack testing as outlined in Section IX Part H.11.e of this SIP and in accordance with 40 CFR 63 Subpart AAAAA.
- iii. An initial compliance test is required no later than January 1, 2019 (if start-up occurs on or before January 1, 2019) or within 180 days of source start-up (if start-up occurs after January 1, 2019) ***All subsequent compliance testing shall be performed at least once annually based upon the date of the last compliance test.***
- iv. Upon plant start-up kiln emissions shall be exhausted through the baghouse during all startup, shutdown, and operations of the kiln.
- v. Start-up/shut-down provisions for SNCR technology be as follows:
 - a. No ammonia or urea injection during startup until the combustion gases exiting the kiln reach the temperature when NO_x reduction is effective, and
 - b. No ammonia or urea injection during shutdown.
 - c. Records of ammonia or urea injection shall be documented in an operations log.

1 The operations log shall include all periods of start-up/shut-down and subsequent
2 beginning and ending times of ammonia or urea injection which documents v.a
3 and v.b above.

d. Chevron Products Company - Salt Lake Refinery

i. Source-wide PM_{2.5} Cap

No later than January 1, 2019, combined emissions of PM_{2.5} (filterable+condensable) shall not exceed 0.305 tons per day (tpd) and 110 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.f.i.B below, the default emission factors to be used are as follows:

Natural gas:

Filterable PM_{2.5}: 1.9 lb/MMscf

Condensable PM_{2.5}: 5.7 lb/MMscf

Plant gas:

Filterable PM_{2.5}: 1.9 lb/MMscf

Condensable PM_{2.5}: 5.7 lb/MMscf

HF alkylation polymer: shall be determined from the latest edition of AP-42 (HF alkylation polymer treated as fuel oil #6) or other EPA-approved methods.

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

FCC Stack:

The PM_{2.5} emission factors shall be based on the most recent stack test and verified by parametric monitoring as outlined in IX.H.11.g.i.B.III

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors listed in IX.H.12.f.i.A above apply until such time as stack testing is conducted as provided in IX.H.11.e or as outlined below:

Initial PM_{2.5} stack testing on the FCC stack has been performed and shall be conducted at least [annually]once every three (3) years from the date of the last stack test. Stack testing shall be performed as outlined in IX.H.11.e.

C. Compliance with the source-wide PM_{2.5} Cap shall be determined for each day as follows:

Total 24-hour PM_{2.5} emissions for the emission points shall be calculated by adding

the daily results of the PM_{2.5} emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the FCC to arrive at a combined daily PM_{2.5} emission total.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The equation used to determine emissions for the boilers and furnaces shall be as follows: Emissions = Emission Factor (lb/MMscf) * Gas Consumption (MMscf/24 hrs)/(2,000 lb/ton)

Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 2.1 tons per day (tpd) and 766.5 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.f.ii.B below, the default emission factors to be used are as follows:

Natural gas: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Plant gas: assumed equal to natural gas

Alkylation polymer: shall be determined from the latest edition of AP-42 (as fuel oil #6) or other EPA-approved methods.

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

1
2 B. The default emission factors listed in IX.H.12.f.ii.A above apply until such time as
3 stack testing is conducted as provided in IX.H.11.e or as outlined below:

4
5 Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment
6 above 100 MMBtu/hr has been performed and shall be conducted at least
7 [annually]once every three (3) years from the date of the last stack test. At that
8 time a new flow-weighted average emission factor in terms of: lbs/MMBtu shall be
9 derived for each combustion type listed in IX.H.12.f.ii.A above. Stack testing shall
10 be performed as outlined in IX.H.11.e.

11
12 C. Compliance with the source-wide NO_x Cap shall be determined for each day as
13 follows:

14
15 Total 24-hour NO_x emissions shall be calculated by adding the emissions for each
16 emitting unit. The emissions for each emitting unit shall be calculated by
17 multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each
18 fuel combusted at each affected unit by the associated emission factor, and
19 summing the results.

20
21 A NO_x CEM shall be used to calculate daily NO_x emissions from the FCC.
22 Emissions shall be determined by multiplying the nitrogen dioxide concentration in
23 the flue gas by the flow rate of the flue gas. The NO_x concentration in the flue gas
24 shall be determined by a CEM as outlined in IX.H.11.f.

25
26 For purposes of this subsection a “day” is defined as a period of 24-hours
27 commencing at midnight and ending at the following midnight.

28
29 Daily natural gas and plant gas consumption shall be determined through the use of
30 flow meters.

31
32 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
33 tanks that supply combustion sources.

34
35 Results shall be tabulated for each day, and records shall be kept which include the
36 meter readings (in the appropriate units) and the calculated emissions

37
38 iii. Source-wide SO₂

39
40 No later than January 1, 2019, combined emissions of SO₂ shall not exceed 1.05 tons
41 per day (tpd) and 383.3 tons per rolling 12-month period.

42
43 A. Setting of emission factors:

44
45 The emission factors derived from the most current performance test shall be

1 applied to the relevant quantities of fuel combusted. The default emission factors to
2 be used are as follows:

3
4 FCC: The emission rate shall be determined by the FCC SO₂ CEM as outlined in
5 IX.H.11.f.

6
7 SRUs: The emission rate shall be determined by multiplying the sulfur dioxide
8 concentration in the flue gas by the flow rate of the flue gas. The sulfur dioxide
9 concentration in the flue gas shall be determined by CEM as outlined in IX.H.11.f.

10
11 Natural gas: EF = 0.60 lb/MMscf

12
13 Fuel oil & HF Alkylation polymer: The emission factor to be used for combustion
14 shall be calculated based on the weight percent of sulfur, as determined by ASTM
15 Method D-4294-89 or EPA-approved equivalent acceptable to the Director, and the
16 density of the fuel oil, as follows:

17
18
$$\text{EF (lb SO}_2\text{/k gal)} = \text{density (lb/gal)} * (1000 \text{ gal/k gal}) * \text{wt.\% S/100} * (64 \text{ lb SO}_2\text{/32}$$

19
$$\text{lb S)}$$

20
21 Plant gas: the emission factor shall be calculated from the H₂S measurement
22 obtained from the H₂S CEM.

23
24 Where mixtures of fuel are used in a Unit, the above factors shall be weighted
25 according to the use of each fuel.

26
27 B. Compliance with the source-wide SO₂ Cap shall be determined for each day as
28 follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂
29 emissions for natural gas and plant fuel gas combustion, to those from the FCC and
30 SRU stacks.

31
32 Daily natural gas and plant gas consumption shall be determined through the use of
33 flow meters.

34
35 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
36 tanks that supply combustion sources.

37
38 Results shall be tabulated for each day, and records shall be kept which include
39 CEM readings for H₂S (averaged for each one-hour period), all meter reading (in
40 the appropriate units), fuel oil parameters (density and wt% sulfur for each day any
41 fuel oil is burned), and the calculated emissions.

42
43 iv. Emergency and Standby Equipment and Alternative Fuels

44
45 A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in

standby or emergency equipment at all times.

B. HF alkylation polymer may be burned in the Alky Furnace (F-36017).

C. Plant coke may be burned in the FCC Catalyst Regenerator.

v. Compressor Engine Requirements

A. Emissions of NO_x from each rich-burn compressor engine shall not exceed the following:

Engine Number	NO _x in ppmvd @ 0% O ₂
K35001	236
K35002	208
K35003	230

B. Initial stack testing to demonstrate compliance with the above emission limitations shall be performed no later than January 1, 2019 and at least annually ~~once every three years thereafter~~. Stack testing shall be performed as outlined in IX.H.11.e.

vi. Flare Calculation

A. Chevron's Flare #3 receives gases from its Isomerization unit, Reformer unit as well as its HF Alkylation Unit. The HF Alkylation Unit's flow contribution to Flare #3 will not be included in determining compliance with the flow restrictions set in IX.H.11.g.v.B

vii. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
Boilers: 5, 6, 7	Low NOx burners and flue gas recirculation (FGR)
Cooling Water Towers	High efficiency drift eliminators
Crude Furnaces F21001, F21002	Low NOx burners
Crude Oil Loading	Vapor Combustion Unit (VCU)
FCC Regenerator Stack	Vacuum gas oil hydrotreater, Electrostatic precipitator (ESP) and cyclones
Flares: Flare 1, 2, 3	Flare gas recovery system
HDS Furnaces F64010, F64011	Low NOx burners
Reformer Compressor Drivers K35001, K35002, K35003	Selective Catalytic Reduction (SCR)
Sulfur Recovery Unit 1	Tail gas treatment unit and tail gas incineration
Sulfur Recovery Unit 2	Tail gas treatment unit and tail gas incineration
Wastewater Treatment Plant	Existing wastewater controls system of induced air flotation (IAF) and regenerative thermal oxidation (RTO)

e. Compass Minerals Ogden Inc.

- i. NO_x emissions to the atmosphere from the indicated emission point shall not exceed the following concentrations:

Emission Points	Concentration (ppm)	lb/hr
Boiler #1	9.0	1.3
Boiler #2	9.0	1.3

Compliance to the above emission limits shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP. A compliance test shall be performed at least annually subsequent to the initial compliance test.

- ii. PM_{2.5} emissions (filterable+condensable) to the atmosphere from each of the following emission points shall not exceed the listed concentration and lb/hr emission rates:

Emission Unit	PM _{2.5} Emission Rate (lb/hr)	Concentration Emission Rate (grains/dscf)
AH-500	1.61	0.01
AH-502	0.74	0.04
AH-513	1.49	0.0114
BH-001	0.37	0.01
BH-002	0.47	0.01
BH-008	4.25	0.01
BH-501	1.15	0.01
BH-502	0.06	0.0053
BH-503	0.23	0.01
BH-505	0.12	0.01
AH-1555	0.39	0.01
BH-1400	2.78	0.02
AH-692	0.12	0.01
BH-1516	0.22	0.01

- A. Compliance to the above emission limits shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP. Compliance testing shall be performed annually.

- B. Process emissions shall be routed through operating controls prior to being emitted to the atmosphere.

- iii. Emissions of VOC from all Magnesium Chloride Evaporators (four stacks total) shall not exceed 6.18 lb/hr.

- A. Compliance shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP. Compliance testing shall be performed at least ~~annually~~ once every three years.

1
2
3
4

B. Process emissions shall be routed through operating controls prior to being emitted to the atmosphere.

f. Hexcel Corporation: Salt Lake Operations

i. The following limits shall not be exceeded for fiber line operations:

A. 5.50 MMscf of natural gas consumed per day.

B. 0.061 MM pounds of carbon fiber produced per day.

C. Compliance with each limit shall be determined by the following methods:

I. Natural gas consumption shall be determined by examination of natural gas billing records for the plant and onsite pipe-line metering.

II. Fiber production shall be determined by examination of plant production records.

III. Records of consumption and production shall be kept on a daily basis for all periods when the plant is in operation.

ii. After a shutdown and prior to startup of fiber lines 13 to 16, the line's baghouse(s) and natural gas injection dual chambered regenerative thermal oxidizer shall be started and remain in operation during production.

A. During fiber line production, the static pressure differential across the filter media shall be within the manufacturer's recommended range and shall be recorded daily.

B. The manometer or the differential pressure gauge shall be calibrated according to the manufacturer's instructions at least once every 12 months.

iii. Filter boxes will be installed on Fiber lines 13 and 14 to control PM_{2.5} emissions no later than December 31, 2019.

iv. Ultra Low NO_x Burners with flue gas recirculation shall be installed on Fiber lines 3, 4, and 7 to control NO_x emissions no later than December 31, 2024.

A. Emission limitations for NO_x shall be as follows:

Concentration (ppm)

Fiber Line 3	9.0
Fiber Line 4	9.0
Fiber Line 7	9.0

B. Stack testing shall be performed at least once ~~[annually]~~ every (3) years based upon the date of the last compliance test and at a time when PAN is not being introduced into the burners.

v. De-NO_x Water Direct Fired Thermal Oxidizer (DFTO) shall be installed on Fiber lines 13, 14, 15, and 16 to control NO_x emissions no later than December 31, 2024.

vi. After a shutdown and prior to startup of the fiber lines, the residence time and temperature associated with the regenerative thermal-oxidation fume incinerators and solvent-coating fume incinerators shall be started and remain in operation during production.

A. Unless otherwise indicated, the carbon fiber production thermal-oxidation fume incinerators the minimum temperature shall be 1,400 deg F and the residence time shall be greater than or equal to 0.5 seconds

Solvent-coating fume incinerators the minimum temperature shall be 1,450 deg F and the residence time shall be greater than or equal to 0.5 seconds

For fiber lines 6, 7, 8, 10, 11, 12, and the line associated with the Research and Development Facility, the solvent coating fume incinerators temperature shall range from 1,400 to 1,700 deg F and the residence time shall be greater than or equal to 1.0 second

Residence times shall be determined by:

$$R = V / Q_{\max}$$

Where

R = residence time

V = interior volume of the incinerator – ft³

Q_{max} = maximum exhaust gas flow rate – ft³/second

B. Incinerator temperatures shall be monitored with temperature sensing equipment that is capable of continuous measurement and readout of the combustion temperature. The readout shall be located such that an inspector/operator can at any time safely read the output. The measurement shall be accurate within ± 25°F at operating temperature. The measurement need not be continuously recorded. All instruments shall be calibrated against a primary standard at least once every 180 days. The calibration procedure shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 6.3, and 10.31, or use a type "K" thermocouple.

g. Holly Corporation: Holly Refining & Marketing Company (Holly Refinery)

i. Source-wide PM_{2.5} Cap

No later than January 1, 2019, PM_{2.5} emissions (filterable + condensable) from all combustion sources shall not exceed 47.6 tons per rolling 12-month period and 0.134 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12. [i]g.i.B below, the default emission factors to be used are as follows:

Natural gas or Plant gas:

non-NSPS combustion equipment: 7.65 lb PM_{2.5}/MMscf

NSPS combustion equipment: 0.52 lb PM_{2.5}/MMscf

Fuel oil:

The filterable PM_{2.5} emission factor for fuel oil combustion shall be determined based on the sulfur content of the oil as follows:

$$\text{PM}_{2.5} \text{ (lb/1000 gal)} = (10 * \text{wt. \% S}) + 3$$

The condensable PM_{2.5} emission factor for fuel oil combustion shall be determined from the latest edition of AP-42.

FCC Wet Scrubbers:

The PM_{2.5} emission factors shall be based on the most recent stack test and verified by parametric monitoring as outlined in IX.H.11.g.i.B.III. As an alternative to a continuous parameter monitor system or continuous opacity monitoring system for PM emissions from any FCCU controlled by a wet gas scrubber, as required in Subsection IX.H.11.g.i.B.III, the owner/operator may satisfy the opacity monitoring requirements from its FCC Units with wet gas scrubbers through an alternate monitoring program as approved by the EPA and acceptable to the Director.

B. The default emission factors listed in IX.H.12. [i]g.i.A above apply until such time as stack testing is conducted as outlined below:

Initial stack testing on all NSPS combustion equipment shall be conducted no later than January 1, 2019 and at least ~~annually~~ once every three years thereafter. At that time a new flow-weighted average emission factor in terms of: lb PM_{2.5}/MMBtu shall be derived. Stack testing shall be performed as outlined in IX.H.11.e.

C. Compliance with the source-wide PM_{2.5} Cap shall be determined for each day as follows: Total 24-hour PM_{2.5} emissions for the emission points shall be calculated by adding the daily results of the PM_{2.5} emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the wet scrubbers to arrive at a combined daily PM_{2.5} emission total.

For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters on all gas-fueled combustion equipment.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply fuel oil to combustion sources.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Natural/Plant Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/kgal)} * \text{Fuel Oil Consumption (kgal/day)} / (2,000 \text{ lb/ton})$$

Results shall be tabulated for each day, and records shall be kept which include all meter readings (in the appropriate units), and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, NO_x emissions into the atmosphere from all emission points shall not exceed 347.1 tons per rolling 12-month period and 2.09 tons per day (tpd).

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted.

Unless adjusted by performance testing as discussed in IX.H.12. [i]g.ii.B below, the default emission factors to be used are as follows:

Natural gas/refinery fuel gas combustion using:

Low NO_x burners (LNB): 41 lbs/MMscf

Ultra-Low NO_x (ULNB) burners: 0.04 lbs/MMbtu

Next Generation Ultra Low NO_x burners (NGULNB): 0.10 lbs/MMbtu

Boiler #5: 0.02 lbs/MMbtu

All other boilers with selective catalytic reduction (SCR): 0.02 lbs/MMbtu

All other combustion burners: 100 lb/MMscf

Where:

"Natural gas/refinery fuel gas" shall represent any combustion of natural gas, refinery fuel gas, or combination of the two in the associated burner.

All fuel oil combustion: 120 lbs/Kgal

B. The default emission factors listed in IX.H.12. [k]g.ii.A above apply until such time as stack testing is conducted as outlined in IX.H.11.e or by NSPS.

C. Compliance with the Source-wide NO_x Cap shall be determined for each day as follows: Total daily NO_x emissions for emission points shall be calculated by adding the results of the NO_x equations for plant gas, fuel oil, and natural gas combustion listed below. For purposes of this subsection a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Natural Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Plant Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\begin{aligned} \text{Emissions (tons/day)} &= \text{Emission Factor (lb/MMBTU)} * \text{Burner Heat Rating (BTU/hr)} * \\ &24 \text{ hours per day} / (2,000 \text{ lb/ton}) \end{aligned}$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/kgal)} * \text{Fuel Oil Consumption (kgal/day)} / (2,000 \text{ lb/ton})$$

Results shall be tabulated for each day; and records shall be kept which include the meter readings (in the appropriate units), emission factors, and the calculated emissions.

iii. Source-wide SO₂ Cap

No later than January 1, 2019, the emission of SO₂ from all emission points (excluding routine SRU turnaround maintenance emissions) shall not exceed 110.3 tons per rolling 12- month period and 0.31 tons per day (tpd).

A. Setting of emission factors:

The emission factors listed below shall be applied to the relevant quantities of fuel combusted:

Natural gas - 0.60 lb SO₂/MMscf

Plant gas - The emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a CEM which will measure the H₂S content of the fuel gas. The CEM shall operate as outlined in IX.H.11.f.

Fuel oil - The emission factor to be used in conjunction with fuel oil combustion shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or EPA-approved equivalent, and the density of the fuel oil, as follows:

$$(\text{lb of SO}_2/\text{kgal}) = (\text{density lb/gal}) * (1000 \text{ gal/kgal}) * (\text{wt. \%S})/100 * (64 \text{ g SO}_2/32 \text{ g S})$$

The weight percent sulfur and the fuel oil density shall be recorded for each day any fuel oil is combusted.

- B. Compliance with the Source-wide SO₂ Cap shall be determined for each day as follows: Total daily SO₂ emissions shall be calculated by adding daily results of the SO₂ emissions equations listed below for natural gas, plant gas, and fuel oil combustion. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

The equations used to determine emissions are:

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Natural Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/MMscf)} * \text{Plant Gas Consumption (MMscf/day)} / (2,000 \text{ lb/ton})$$

$$\text{Emissions (tons/day)} = \text{Emission Factor (lb/kgal)} * \text{Fuel Oil Consumption (kgal/24 hrs)} / (2,000 \text{ lb/ton})$$

For purposes of these equations, fuel consumption shall be measured as outlined below: Daily natural gas and plant gas consumption shall be determined through

the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each one-hour period), all meter reading (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

iv. Emergency and Standby Equipment

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

vi. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
Process heaters and boilers	Boilers 8&11: LNB+SCR Boilers 5, 9 & 10: SCR Process heaters 20H2, 20H3 23H1, 24H1, 25H1: ULNB
Cooling water towers 10, 11	High efficiency drift eliminators
FCCU regenerator stacks	WGS with Lo-TOx
Flares	Flare gas recovery system
Sulfur recovery unit	Tail gas incineration and WGS with Lo-TOx
Wastewater treatment plant	API separators, dissolved gas floatation (DGF), moving bed bio-film reactors (MBBR)

h. Kennecott Utah Copper (KUC): Mine

i. Bingham Canyon Mine (BCM)

- A. Maximum total mileage per calendar day for diesel-powered ore and waste haul trucks shall not exceed 30,000 miles.

KUC shall keep records of daily total mileage for all periods when the mine is in operation. KUC shall track haul truck miles with a Global Positioning System or equivalent. The system shall use real time tracking to determine daily mileage.

- B. To minimize fugitive dust on roads at the mine, the owner/operator shall perform the following measures:

- I. Apply water to all active haul roads as weather and operational conditions warrant except during precipitation or freezing weather conditions, and shall apply a chemical dust suppressant to active haul roads located outside of the pit influence boundary no less than twice per year.
- II. Chemical dust suppressant shall be applied as weather and operational conditions warrant except during precipitation or freezing weather conditions on unpaved access roads that receive haul truck traffic and light vehicle traffic.
- III. Records of water and/or chemical dust control treatment shall be kept for all periods when the BCM is in operation.
- IV. KUC is subject to the requirements in the most recent federally approved Fugitive Emissions and Fugitive Dust rules.

- C. The In-pit crusher baghouse shall not exceed a PM_{2.5} emission limit of 0.78 lbs/hr(0.007 gr/dscf) PM_{2.5} monitoring shall be performed by stack testing [annually] every three years.

~~[D. Minimum design payload per ore and waste haul truck shall not be less than 240 tons. The minimum design payload for all trucks combined shall be an average of 300 tons.]~~

ii. Copperton Concentrator (CC)

- A. Control emissions from the Product Molybdenite Dryers with a scrubber during operation of the dryers.

During operation of the dryers, the static pressure differential between the inlet and outlet of the scrubber shall be within the manufacturer's recommended range and shall be recorded weekly.

The manometer or the differential pressure gauge shall be calibrated according to the manufacturer's instructions at least once per year.

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The remaining heaters shall not operate more than 300 hours per rolling 12- month period unless upgraded so the NOx emission rate is no greater than 30 ppm.

i. Kennecott Utah Copper (KUC): Power Plant

i. Utah Power Plant

A. The following requirements are applicable to Unit #4:

I. ~~[Ø]~~During the period from November 1, to the last day in February inclusive, only natural gas shall only be used as a fuel, unless the supplier or transporter of natural gas imposes a curtailment. Unit #4 may then burn coal, only for the duration of the curtailment plus sufficient time to empty the coal bins following the curtailment. The Director shall be notified of the curtailment within 48 hours of when it begins and within 48 hours of when it ends.

II. Emissions to the atmosphere when burning natural gas shall not exceed the following rates and concentrations:

Pollutant	grains/dscf 68°F. 29.92 in Hg	ppmdv 3% O ₂	lbs/hr	lbs/MMBtu	lbs/event
1. PM _{2.5} :					
Filterable	0.004				
Filterable + condensable	0.03				
2. NO _x :		[20] 30	[17.0] 32	[0.02] 0.04	395
Startup / Shutdown					

III. During the period from March 1 to October 31, Unit #4 shall use coal, natural gas, or oils as fuels.

IV. When burning coal Unit #4 shall not exceed the following emission rates to the atmosphere:

Pollutant	grains/dscf 68°F. 29.92 in Hg	ppmdv 3% O ₂	lbs/MMBTU	lbs/event
1. PM _{2.5} :				
Filterable	0.029			
Filterable + Condensable	0.29			
2. NO _x		80	0.06	
Startup / Shutdown				395

* Except during startup and shutdown.

V. Startup / Shutdown Limitations:

- The total number of startups and shutdowns together shall not exceed 690 per calendar year.
- The NO_x emissions shall not exceed 395 lbs from each startup/shutdown event, which shall be determined using manufacturer data.

3. Definitions:

- (i) Startup cycle duration ends when the unit achieves half of the design electrical generation capacity.
- (ii) Shutdown duration cycle begins with the initiation of boiler shutdown and ends when fuel flow to the boiler is discontinued.

B. Upon commencement of operation of Unit #4, stack testing to demonstrate compliance with each emission limitation-in IX.H.12.j.i.A and IX.H.12.j.i.B shall be performed as follows:

* Initial compliance testing for the Unit 4 boiler is required. Initial testing shall be performed when burning natural gas. The initial test shall be performed within 60 days after achieving the maximum heat input capacity production rate at which the affected facility will be operated and in no case later than 180 days after the initial startup of a new emission source.

The limited use of natural gas during maintenance firings and break-in firings does not constitute operation and does not require stack testing.

Pollutant	Test Frequency
-----------	----------------

- | | |
|----------------------|------------|
| I. PM _{2.5} | every year |
| II. NO _x | every year |

C. Unit #5 (combined cycle, natural gas-fired combustion turbine) shall not exceed the following emission rates to the atmosphere:

Pollutant	lbs/hr	lbs/event	ppmdv (15% O ₂ dry)
I. PM _{2.5} with duct firing: Filterable + condensable	18.8		
II. VOC:			2.0*
III. NO _x : Startup / Shutdown	395		2.0*

* Except during startup and shutdown.

IV. Startup / Shutdown Limitations:

1. The total number of startups and shutdowns together shall not exceed 690 per calendar year.
2. The NO_x emissions shall not exceed 395 lbs from each startup/shutdown event, which shall be determined using manufacturer data.

3. Definitions:

(i) Startup cycle duration ends when the unit achieves half of the design electrical generation capacity.

(ii) Shutdown duration cycle begins with the initiation of boiler shutdown and ends when fuel flow to the boiler is discontinued.

D: Upon commencement of operation of Unit #5*, stack testing to demonstrate compliance with the emission limitations in IX.H.12.m.i.B shall be performed as follows for the following air contaminants

* Initial compliance testing for the natural gas turbine and duct burner is required. The initial test shall be performed within 60 days after achieving the maximum heat input capacity production rate at which the affected facility will be operated and in no case later than 180 days after the initial startup of a new emission source.

The limited use of natural gas during maintenance firings and break-in firings does not constitute operation and does not require stack testing.

Pollutant	Test Frequency
I. PM _{2.5}	every year
II. NO _x	every year
III. VOC	every year

j. Kennecott Utah Copper: Smelter and Refinery

i. Smelter:

A. Emissions to the atmosphere from the indicated emission points shall not exceed the following rates and concentrations:

I. Main Stack (Stack No. 11)

1. PM_{2.5}
 - a. 85 lbs/hr (filterable)
 - b. 434 lbs/hr (filterable + condensable)
2. SO₂
 - a. 552 lbs/hr (3 hr. rolling average)
 - b. 422 lbs/hr (daily average)
3. NO_x 154 lbs/hr (daily average)

II. Holman Boiler

1. NO_x
 - a. 14 lbs/hr, (calendar-day average)

B. Stack testing to show compliance with the emissions limitations of Condition (A) above shall be performed as specified below:

EMISSION POINT	POLLUTANT	TEST FREQUENCY
I. Main Stack (Stack No. 11)	PM _{2.5}	Every Year
	SO ₂	CEM
	NO _x	CEM
II. Holman Boiler	NO _x	Every <u>three</u> years and CEMS or alternate method according to applicable NSPS standards

The Holman boiler shall use an EPA approved test method [~~annually~~every three years and in between years use] or an approved CEMS or alternate method according to applicable NSPS standards.

C. During startup/shutdown operations, NO_x and SO₂ emissions are monitored by CEMS or alternate methods in accordance with applicable NSPS standards.

D. KUC must operate and maintain the air pollution control equipment and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

ii. Refinery:

A. Emissions to the atmosphere from the indicated emission point shall not exceed the

following rate:

EMISSION POINT	POLLUTANT	MAXIMUM EMISSION RATE
The sum of two (Tankhouse) Boilers	NO _x	9.5 lbs/hr (before December 2020)
(Upgraded Tankhouse Boiler)	NO _x	1.5 lbs/hr (After December 2020)
Combined Heat Plant	NO _x	5.96 lbs/hr

B. Stack testing to show compliance with the above emission limitations shall be performed as follows:

EMISSION POINT	POLLUTANT	TESTING FREQUENCY
Upgraded Tankhouse Boilers	NO _x	every <u>three years</u> *
Combined Heat Plant	NO _x	every year

*Stack testing shall be performed on boilers that have operated more than 300 hours during a three year period.

C. One 82 MMBTU/hr Tankhouse boiler shall be upgraded to meet a NO_x rating of 9 ppm no later than December 31, 2020. The remaining Tankhouse boiler shall not consume more than 100,000 MCF of natural gas per rolling 12- month period unless upgraded so the NO_x emission rate is no greater than 30 ppm

D. KUC must operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. Records shall be kept on site which indicate the date and time of startups and shutdowns.

k. Nucor Steel Mills

- i. Emissions to the atmosphere from the indicated emission points shall not exceed the following rates:

A. Electric Arc Furnace Baghouse

I. PM_{2.5}

1. 17.4 lbs/hr (24 hr. average filterable)
2. 29.53 lbs/hr (24 hr. average condensable)

II. SO₂

1. 93.98 lbs/hr (3 hr. rolling average)
2. 89.0 lbs/hr (daily average)

III. NO_x 59.5 lbs/hr (calendar-day average)

IV. VOC 22.20 lbs/hr

B. Reheat Furnace #1

NO_x 15.0 lb/hr

C. Reheat Furnace #2

NO_x 8.0 lb/hr

- ii. Stack testing to show compliance with the emissions limitations of Condition (i) above shall be performed as outlined in IX.H.11.e and as specified below:

EMISSION POINT	POLLUTANT	TEST FREQUENCY
A. Electric Arc Furnace Baghouse	PM _{2.5}	every year
	SO ₂	CEM
	NO _x	CEM
	VOC	every year
B. Reheat Furnace #1	NO _x	every year
C. Reheat Furnace #2	NO _x	every year

iii. Testing Status (To be applied to (i) and (ii) above)

- A. To demonstrate compliance with the Electric Arc Furnace stack mass emissions limits for SO₂ and NO_x of Condition (i)(A) above, Nucor shall calibrate, maintain and operate the measurement systems for continuously monitoring for SO₂ and NO_x concentrations and stack gas volumetric flow rates in the Electric Arc Furnace stack. Such measurement systems shall meet the requirements of R307-170.

- 1 B. For PM_{2.5} testing, 40 CFR 60, Appendix A, Method 5D, or another EPA approved
2 method acceptable to the Director, shall be used to determine total TSP emissions. If
3 TSP emissions are below the PM_{2.5} limit, that will constitute compliance with the
4 PM_{2.5} limit. If TSP emissions are not below the PM_{2.5} limit, the owner/operator shall
5 retest using EPA approved methods specified for PM_{2.5} testing, within 120 days.
- 6
7 C. Startup/shutdown NO_x and SO₂ emissions are monitored by CEMS.

1 I. PacifiCorp Energy: Gadsby Power Plant

2
3 i. Steam Generating Unit #1:

- 4
5 A. Emissions of NO_x shall be no greater than 179 lbs/hr on a three (3) hour block
6 average basis.
7
8 B. Emissions of NO_x shall not exceed 336 ppm_{dv} (@ 3% O₂, dry)
9
10 C. The owner/operator shall install, certify, maintain, operate, and quality-assure a
11 CEM consisting of NO_x and O₂ monitors to determine compliance with the
12 NO_x limitation. The CEM shall operate as outlined in IX.H.11.f.
13

14 ii. Steam Generating Unit #2:

- 15
16 A. Emissions of NO_x shall be no greater than 204 lbs/hr on a three (3) hour block
17 average basis.
18
19 B. Emissions of NO_x shall not exceed 336 ppm_{dv} (@ 3% O₂, dry)
20
21 C. The owner/operator shall install, certify, maintain, operate, and quality-assure a
22 continuous emission monitoring system (CEMS) consisting of NO_x and O₂
23 monitors to determine compliance with the NO_x limitation.
24

25 iii. Steam Generating Unit #3:

- 26 A. Emissions of NO_x shall be no greater than
27
28 I. 142 lbs/hr on a three (3) hour block average basis, applicable between
29 November 1 and February 28/29.
30
31 II. 203 lbs/hr on a three (3) hour block average basis, applicable between March
32 1 and October 31.
33
34 B. Emissions of NO_x shall not exceed
35
36 I. 168 ppm_{dv} (@ 3% O₂, dry), applicable between November 1 and February
37 28/29
38
39 II. 168 ppm_{dv} (@ 3% O₂, dry), applicable between applicable between March 1
40 and October 31.
41
42 C. The owner/operator shall install, certify, maintain, operate, and quality-assure a
43 CEM consisting of NO_x and O₂ monitors to determine compliance with the
44 NO_x limitation. The CEM shall operate as outlined in IX.H.11.f.
45

46 iv. Steam Generating Units #1-3:

- 1
2 A. The owner/operator shall use only natural gas as a primary fuel and No. 2 fuel oil or
3 better as back-up fuel in the boilers. The No. 2 fuel oil may be used only during
4 periods of natural gas curtailment and for maintenance firings. Maintenance firings
5 shall not exceed one-percent of the annual plant Btu requirement. In addition,
6 maintenance firings shall be scheduled between April 1 and November 30 of any
7 calendar year. Records of fuel oil use shall be kept and they shall show the date the
8 fuel oil was fired, the duration in hours the fuel oil was fired, the amount of fuel oil
9 consumed during each curtailment, and the reason for each firing.
10
11 v. Natural Gas-fired Simple Cycle, Catalytic-controlled Turbine Units:
12
13 A. Total emissions of NO_x from all three turbines shall be no greater than 600
14 lbs/day. For purposes of this subsection a "day" is defined as a period of 24-hours
15 commencing at midnight and ending at the following midnight.
16
17 B. Emissions of NO_x from each turbine stack shall not exceed 5 ppmvd (@ 15% O₂
18 dry). Emissions shall be calculated on a 30-day rolling average. This limitation
19 applies to steady state operation, not including startup and shutdown.
20
21 C. The owner/operator shall install, certify, maintain, operate, and quality-assure a
22 CEM consisting of NO_x and O₂ monitors to determine compliance with the
23 NO_x limitation. The CEM shall operate as outlined in IX.H.11.f.
24
25 vi. Combustion Turbine Startup / Shutdown Emission Minimization Plan
26
27 A. Startup begins when the fuel valves open and natural gas is supplied to the
28 combustion turbines
29
30 B. Startup ends when either of the following conditions is met:
31
32 I. The NO_x water injection pump is operational, the dilution air temperature is
33 greater than 600°F, the stack inlet temperature reaches 570°F, the ammonia
34 block value has opened and ammonia is being injected into the SCR and the
35 unit has reached an output of ten (10) gross MW; or
36
37 II. The unit has been in startup for two (2) hours.
38
39 C. Unit shutdown begins when the unit load or output is reduced below ten (10) gross
40 MW
41 with the intent of removing the unit from service.
42
43 D. Shutdown ends at the cessation of fuel input to the turbine combustor.
44
45 E. Periods of startup or shutdown shall not exceed two (2) hours per combustion
46 turbine per day.

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F. Turbine output (turbine load) shall be monitored and recorded on an hourly basis with an electrical meter.

m. Tesoro Refining and Marketing Company: Salt Lake City Refinery

i. Source-wide PM_{2.5} Cap

No later than January 1, 2019, combined emissions of PM_{2.5} (filterable+condensable) shall not exceed 2.25 tons per day (tpd) and 179 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.p.i.B below, the default emission factors to be used are as follows:

Natural gas:

Filterable PM_{2.5}: 0.0019 lb/MMBtu

Condensable PM_{2.5}: 0.0056 lb/MMBtu

Plant gas:

Filterable PM_{2.5}: 0.0019 lb/MMBtu

Condensable PM_{2.5}: 0.0056 lb/MMBtu

Fuel Oil: The PM_{2.5} emission factor shall be determined from the latest edition of AP-42 or other EPA-approved methods.

FCC Wet Scrubber:

The PM_{2.5} emission factors shall be based on the most recent stack test and verified by parametric monitoring as outlined in IX.H.11.g.i.B.III

Where mixtures of fuel are used in a Unit, the above factors shall be weighted according to the use of each fuel.

B. The default emission factors listed in IX.H.12.m.i.A above apply until such time as stack testing is conducted as provided in IX.H.11.e or as outlined below:

Initial PM_{2.5} stack testing on the FCC wet gas scrubber stack shall be conducted no later than January 1, 2019 and at least [annually]once every three (3) years thereafter. Stack testing shall be performed as outlined in IX.H.11.e.

C. Compliance with the Source-wide PM_{2.5} Cap shall be determined for each day as follows: Total 24-hour PM_{2.5} emissions for the emission points shall be calculated by adding the daily results of the PM_{2.5} emissions equations listed below for natural gas, plant gas, and fuel oil combustion. These emissions shall be added to the emissions from the wet scrubber to arrive at a combined daily PM_{2.5} emission total. For purposes of this subsection a “day” is defined as a period of 24-hours commencing at midnight and ending at the following midnight.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

The emissions for each emitting unit shall be calculated by multiplying the hours of operation of a unit feed rate to a unit, or quantity of each fuel combusted at each affected unity by the associated emission factor, and summing the results.

Results shall be tabulated for each day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions.

ii. Source-wide NO_x Cap

No later than January 1, 2019, combined emissions of NO_x shall not exceed 2.3 tons per day (tpd) and 475 tons per rolling 12-month period.

A. Setting of emission factors:

The emission factors derived from the most current performance test shall be applied to the relevant quantities of fuel combusted. Unless adjusted by performance testing as discussed in IX.H.12.m.ii.B below, the default emission factors to be used are as follows:

Natural gas/refinery fuel gas combustion using:

Low NO_x burners (LNB): 0.051 lbs/MMBtu

Ultra-Low NO_x (ULNB) burners: 0.04 lbs/MMBtu

Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-approved methods.

B. The default emission factors listed in IX.H.12.m.ii.A above apply unless stack testing results are available or emissions are measured by operation of a NO_x CEMS.

Initial NO_x stack testing on natural gas/refinery fuel gas combustion equipment above 100 MMBtu/hr has already been performed and shall be conducted at least ~~annually~~ once every three (3) years. At that time a new flow-weighted average emission factor in terms of: lbs/MMBtu shall be derived. Stack testing shall be performed as outlined in IX.H.11.e. Stack testing is not required for natural gas/refinery fuel gas combustion equipment with a NO_x CEMS.

C. Compliance with the source-wide NO_x Cap shall be determined for each day as follows: Total 24-hour NO_x emissions shall be calculated by adding the emissions for each emitting unit. The emissions for each emitting unit shall be calculated by

1 multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each
 2 fuel combusted at each affected unit by the associated emission factor, and
 3 summing the results.

4
 5 A NO_x CEM shall be used to calculate daily NO_x emissions from the FCCU wet
 6 gas scrubber stack. Emissions shall be determined by multiplying the nitrogen
 7 dioxide concentration in the flue gas by the flow rate of the flue gas. The NO_x
 8 concentration in the flue gas shall be determined by a CEM as outlined in
 9 IX.H.11.f.

10
 11 Daily natural gas and plant gas consumption shall be determined through the use of
 12 flow meters.

13
 14 Daily fuel oil consumption shall be monitored by means of leveling gauges on all
 15 tanks that supply combustion sources.

16
 17 For purposes of this subsection a "day" is defined as a period of 24-hours
 18 commencing at midnight and ending at the following midnight.

19
 20 Results shall be tabulated for each day, and records shall be kept which include the
 21 meter readings (in the appropriate units) and the calculated emissions.

22 23 iii. Source-wide SO₂ Cap

24
 25 No later than January 1, 2019, combined emissions of SO₂ shall not exceed 3.8 tons per
 26 day (tpd) and 300 tons per rolling 12-month period.

27 28 A. Setting of emission factors:

29
 30 The emission factors derived from the most current performance test shall be
 31 applied to the relevant quantities of fuel combusted. The default emission factors to
 32 be used are as follows:

33
 34 Natural gas: EF = 0.0006 lb/MMBtu

35 Propane: EF = 0.0006 lb/MMBtu

36 Diesel fuel: shall be determined from the latest edition of AP-42 or other EPA-
 37 approved methods.

38
 39 Plant fuel gas: the emission factor shall be calculated from the H₂S measurement or
 40 from the SO₂ measurement obtained by direct testing/monitoring.

41
 42 Where mixtures of fuel are used in a unit, the above factors shall be weighted
 43 according to the use of each fuel.

44 45 B. Compliance with the source-wide SO₂ Cap shall be determined for each day as 46 follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂

emissions for natural gas, plant fuel gas, and propane combustion to those from the wet gas scrubber stack.

Daily SO₂ emissions from the FCCU wet gas scrubber stack shall be determined by multiplying the SO₂ concentration in the flue gas by the flow rate of the flue gas. The SO₂ concentration in the flue gas shall be determined by a CEM as outlined in IX.H.11.f.

SRUs: The emission rate shall be determined by multiplying the sulfur dioxide concentration in the flue gas by the flow rate of the flue gas. The sulfur dioxide concentration in the flue gas shall be determined by CEM as outlined in IX.H.11.f

Daily SO₂ emissions from other affected units shall be determined by multiplying the quantity of each fuel used daily at each affected unit by the appropriate emission factor.

Daily natural gas and plant gas consumption shall be determined through the use of flow meters.

Daily fuel oil consumption shall be monitored by means of leveling gauges on all tanks that supply combustion sources.

Results shall be tabulated for each day, and records shall be kept which include CEM readings for H₂S (averaged for each one-hour period), all meter reading (in the appropriate units), fuel oil parameters (density and wt% sulfur for each day any fuel oil is burned), and the calculated emissions.

C. Instead of complying with Condition IX.H.11.g.ii.A, source may reduce the H₂S content of the refinery plant gas to 60 ppm or less or reduce SO₂ concentration from fuel gas combustion devices to 8 ppmvd at 0% O₂ or less as described in 40 CFR 60.102a. Compliance shall be based on a rolling average of 365 days. The owner/operator shall comply with the fuel gas or SO₂ emissions monitoring requirements of 40 CFR 60.107a and the related recordkeeping and reporting requirements of 40 CFR 60.108a. As used herein, refinery "plant gas" shall have the meaning of "fuel gas" as defined in 40 CFR 60.101a, and may be used interchangeably.

iv. SO₂ emissions from the SRU/TGTU/TGI shall be limited to:

- A. 1.68 tons per day (tpd) for up to 21 days per rolling 12-month period, and
- B. 0.69 tpd for the remainder of the rolling 12-month period.
- C. Daily sulfur dioxide emissions from the SRU/TGI/TGTU shall be determined by multiplying the SO₂ concentration in the flue gas by the mass flow of the flue gas. The sulfur dioxide concentration in the flue gas shall be determined by CEM as

outlined in IX.H.11.f

v. Emergency and Standby Equipment

A. The use of diesel fuel meeting the specifications of 40 CFR 80.510 is allowed in standby or emergency equipment at all times.

vi. No later than January 1, 2019, the owner/operator shall install the following to control emissions from the listed equipment:

Emission Unit	Control Equipment
FCCU / CO Boiler	Wet Gas Scrubber, LoTOx
Furnace F-1	Ultra Low NOx Burners
Tanks	Tank Degassing Controls
North and South Flares	Flare Gas Recovery
Furnace H-101	Ultra Low NOx Burners
Truck loading rack	Vapor recovery unit
Sulfur recovery unit	Tail Gas Treatment Unit
API separator	Floating roof (single seal)

n. The Procter & Gamble Paper Products Company

- i. Emissions to the atmosphere at all times from the indicated emission points shall not exceed the following rates:

Source: Paper Making Boilers (Each)

Pollutant	Oxygen Ref.	lb/hr
NO _x	3%	3.3
PM _{2.5} (Filterable and Condensables)	3%	0.9

Source: Paper Machine Process Stack

Pollutant	Oxygen Ref.	lb/hr
NO _x	3%	13.50
PM _{2.5} (Filterable and Condensables)	3%	17.95

Source: Utility Boilers (Each)

Pollutant	Oxygen Ref.	lb/hr
NO _x	3%	1.8
PM _{2.5} (Filterable and Condensables)	3%	0.74

- A. Compliance with the above emission limits shall be determined by stack test as outlined in Section IX Part H.11.e of this SIP.

- B. Subsequent to initial compliance testing, stack testing is required [annually] at a minimum of once every three years.

ii. Boiler Startup/Shutdown Emissions Minimization Plan

- A. Startup begins when natural gas is supplied to the Boiler(s) with the intent of combusting the fuel to generate steam. Startup conditions end within thirty (30) minutes of natural gas being supplied to the boilers(s).

- B. Shutdown begins with the initiation of the stop sequence of the boiler until the cessation of natural gas flow to the boiler.

iii. Paper Machine Startup/Shutdown Emissions Minimization Plan

- A. Startup begins when natural gas is supplied to the dryer combustion equipment with the intent of combusting the fuel to heat the air to a desired temperature for the paper machine. Startup conditions end within thirty (30) minutes of natural gas being supplied to the dryer combustion equipment.

- B. Shutdown begins with the diversion of the hot air to the dryer startup stack and then

1 the cessation of natural gas flow to the dryer combustion equipment. Shutdown
2 conditions end within thirty (30) minutes of hot air being diverted to the dryer
3 startup stack.

- o. Utah Municipal Power Association: West Valley Power Plant.
 - i. Total emissions of NO_x from all five (5) catalytic-controlled turbines combined shall be no greater than 1050 lb of NO_x on a daily basis. For purposes of this subpart, a "day" is defined as a period of 24-hours commencing at midnight and ending at the following midnight.
 - ii. Emissions of NO_x shall not exceed 5 ppm_{dv} (@ 15% O₂, dry) on a 30-day rolling average.
 - iii. Total emissions of NO_x from all five (5) catalytic-controlled turbines shall include the sum of all periods in the day including periods of startup, shutdown, and maintenance.
 - iv. The NO_x emission rate (lb/hr) shall be determined by CEM. The CEM shall operate as outlined in IX.H.11.f.

p. University of Utah: University of Utah Facilities

- i Emissions to the atmosphere from the listed emission points in Building 303 LCHWTP shall not exceed the following concentrations:

Emissions Point O ₂ dry)	Pollutant	ppmdv (3%
Boiler #4*	NO _x	187
Boilers #6 & 7	NO _x	9
Boiler #9*	NO _x	9
Turbine	NO _x	9
Turbine and WHRU Duct burner	NO _x	15

*[Boiler #4 B*By December 31, 2019, Boiler #4 will be decommissioned and Boiler #9 will be installed and operational.

- ii. Stack testing to show compliance with the emissions limitations of Condition i above shall be performed as outlined in IX.H.11.e and as specified below:

Emissions Point	Pollutant	Initial Test	Test Frequency
Boilers #4*	NO _x	*	[every year]#
Boilers #6 & 7	NO _x	*	[every year]#
Boiler #9*	NO _x	2020	[every year]#
Turbine	NO _x	*	[every year]#
Turbine and WHRU Duct Burner	NO _x	*	[every year]#

Initial test already performed

* Initial tests have been performed and the next method test using EPA approved test methods shall be performed within [one]3 years of the last stack test. Initial compliance testing for Boiler #9 is required. The initial

test date shall be performed within 60 days after achieving the maximum heat input capacity production rate at which the affected facility will be operated and in no case later than 180 days after the initial startup of a new emission source.

A compliance test shall be performed at least [~~annually~~] once every three years from the date of the last compliance test that demonstrated compliance with the emission limit(s). Compliance testing shall be performed using EPA approved test methods acceptable to the Director. The Director shall be notified, in accordance with all applicable rules, of any compliance test that is to be performed.

- iii. Boiler #4 in the LCHWTP shall be decommissioned and replaced by Boiler #9 by December 31, 2019.
- iv. By the end of the third quarter of calendar year 2019, Boilers #1, #3, and #4 in the UCHWTP shall be limited to a natural gas usage of 530 MMscf per calendar year.
- v. The HSC Transformation Project boilers shall be installed and operational by the end of the third quarter of calendar year 2019. The new HSC Transformation Project boilers shall be equipped with low NOx burners rated at 30 ppmvd at 3% O₂ or less.
- vi. Records shall be kept on site which indicate the date, and time of startup and shutdown.

q. Hill Air Force Base

i. Painting and Depainting Operations

A. VOC emissions from painting and depainting operations shall not exceed 0.58 tons per day (tpd).

I. No later than the 28th of each month, a rolling 30-day VOC emission average shall be calculated for the previous month.

ii. Boilers

A. The combined NO_x emissions for all boilers (except those less than 5 MMBtu/hr) shall not exceed 95 lb/hr. This limit shall not apply during periods of curtailment.

I. No later than the 28th of each month, the NO_x lb/hr emission total shall be calculated for the previous month.

B. No later than December 31, 2024, no boiler shall be operating on base with the capacity over 30 MMBtu/hr and with a manufacture date older than January 1, 1989.

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ATTACHMENT B

Part H Comments and Responses

Big West Oil, LLC (BWO)

Comment Summary H-67: The commenter stated that increasing the stack testing frequencies of PM10 and PM2.5 in Subsections IX.H.2.a.i.B and IX.H.12.b.i.B to annual testing is a burden to not only the refinery but also to UDAQ. The additional workload will be in reviewing additional data and reports, such as stack testing protocols and stack testing results.

Pursuant to the Consent Decree requirements between BWO and the US Environmental Protection Agency, the most recent testing event occurred September 12, 2018. Prior to the Consent Decree, the approval order issued by UDAQ required FCC stack testing for PM once every five (5) years, in accordance with R307-165-2. These stack tests have established that controls for the stack are operating properly. In accordance with terms of the Consent Decree, BWO will be requesting that, under the Consent Decree, testing frequency on the FCC be changed to every three (3) years. To assure the control devices on the FCC stack are operating properly, BWO would also be measuring and recording opacity from the FCC as per the requirements of 40 CFR 63.1572(b) and complying with the opacity limitations as per the requirements of Table 7 to Subpart UUU of Part 63.

BWO is requesting that stack testing frequency remain at once every three (3) years for PM10 and PM2.5 for Subsections IX.H.2.a.i.B and IX.H.12.b.i.B.

UDAQ Response to H-67: UDAQ agrees with this comment. Where specific testing requirements are not identified by a federal standard, the UDAQ monitoring requirements for major sources of emissions are developed to provide an assurance of compliance. The monitoring standard must ensure appropriate pollutants are monitored, must accurately verify the source is operating below emission limits and specify a frequency that is adequate to show continual compliance. Measurements and sampling procedures must include specific test methods and protocols to provide representative and accurate emission data.

As BWO has referenced, Utah rule R307-165-2 requires emissions testing at least once every five (5) years for sources with approval orders or sources listed in section IX, Part H of the SIP. Three years ago the UDAQ established a minimum testing frequency of once every three (3) years for major sources.

NSR permitting engineers who develop the control plan have the responsibility to review emissions data and determine if the testing requirements meet the data goals. If the requirements for sampling demonstrate the data goals are being met, the monitoring requirements in the control plan will be retained. In most instances the minimum test frequency of once every three (3) years is adequate. With a requirement to perform annual stack testing, the Section IX, Part H listed sources would be subject to an estimated \$465,000 per year in added stack testing expenses. More frequent stack testing

will also result in increased workload for sources in regards to employee time spent planning, scheduling, and attending emission tests (several days to weeks dependant upon the emission unit being tested). UDAQ compliance staff will also see an increased workload due to review of the additional data and reports, such as stack testing protocols and stack testing results.

However, there are instances where more frequent monitoring is appropriate. Factors that are considered for requiring more frequent monitoring include variable emission streams, combustion of a variety or mixture of fuels, batch processes, or a history of operating close to permitted emission limits or even exceeding those limits. Specific sources required to conduct annual stack testing should be limited to Chemical Lime Company (Lhoist North America) (H.12.c), Compass Minerals (H.12.e.i and H.12.e.ii), Kennecott Utah Copper – Power Plant (H.12.j), and Nucor Steel Mills (H.12.k). All of the remaining major sources do not meet the criteria for more frequent monitoring listed above, and emissions’ testing once every three (3) years is appropriate to ensure compliance. Additionally, parametric monitoring requirements provide continuous additional data to demonstrate a source is operating within expected operating parameters. Examples of this are the refinery Fluid Catalytic Cracking Units. These parametric monitoring unit requirements are sufficient and are specifically listed under H.1.g.i.B.III, H.11.g.i.B.III and H.12.g.i.A.

The UDAQ believes that the stack testing frequencies developed by DAQ engineers and proposed for public comment on July 1, 2018 in the Utah State Implementation Plan Section IX, Part H are adequate for providing an assurance of compliance. Therefore, the applicable stack testing frequencies changed to annual testing and proposed in the November 1, 2018 Utah State Implementation Plan Section IX, Part H shall be corrected to once every (3) years. This will apply to the following Part H Sections:

H.1.g.i.B.II (page 4);	H.11.g.i.B.II (page 54);	H.12.g.i.B (page 75);
H.2.a.i.B (page 7);	H.12.a.iii.A.II.c (page 58);	H.12.h.i.C (page 80);
H.2.c.ii.A (page 13);	H.12.a.iii.B.II.c (page 58);	H.12.j.i.B.II (page 85);
H.2.d.i.B (page 14);	H.12.b.i.B (page 59);	H.12.j.ii.B (page 86);
H.2.d.v.B (page 18);	H.12.d.i.B (page 66);	H.12.m.i.B (page 92);
H.2.f.i.B (page 20);	H.12.d.ii.B (page 68);	H.12.n.i.B (page 97);
H.2.i.B.II (page 31);	H.12.d.v.B (page 70);	H.12.o.ii (page 98).
H.2.ii.B (page 32);	H.12.e.i (page 71);	
H.2.k.i.B (page 35);	H.12.e.iii.A (page 71);	
H.2.l.ii.E (page 40);	H.12.f.iv.B (page 74);	

Comment Summary H-68: The commenter provided information stating that subsections IX.H.2.a.vi.A and IX.H.12.b.vi.A were added at the company’s request. At the time, BWO agreed to a seasonally-adjusted lower baseline flow rate on refinery flare gas than that imposed by the refinery general requirements. In exchange, the refinery would be granted a two-year extension to implement the changes to reduce process flaring. BWO would be limited to 300,000 scfd of process gases, but this limit would not apply until January 1, 2021. BWO has since

1 **determined that the two-year extension is not necessary, and it will able to meet the**
2 **requirements of IX.H.1.g.v.B and IX.H.11.g.v.B in a timely manner. BWO therefore**
3 **requests that the requirements of IX.H.2.a.vi.A and IX.H.12.b.vi.A be dropped.**
4

5 UDAQ Response to H-68: UDAQ agrees with this comment. BWO had requested the
6 limitation during the original development of this SIP, as one of the BACT control
7 options for process flaring. UDAQ agreed that a seasonally-adjusted limitation on
8 process gases sent to the flare was a viable control option for BWO, given BWO's
9 specific process design constraints. After review, a limitation of 300,000 scfd from
10 October 1 to March 31, and 500,000 from April 1 to September 30 was found to be
11 BACT, with this limit being imposed on January 1, 2021. This was formalized as
12 conditions IX.H.2.a.vi.A and IX.H.12.b.vi.A in the PM10 and PM2.5 sections of the SIP.
13

14 During the first comment period, which was held between August 1 and August 31, 2018,
15 BWO provided verbal comment that this limitation was no longer necessary. BWO had
16 re-reviewed its process internally and determined that meeting the refinery general flare
17 requirements of IX.H.1.g.v.B and IX.H.11.g.v.B would be possible in a timely manner
18 (i.e. by January 1, 2019). With this new information, UDAQ agreed that the seasonally
19 adjusted limit and extension would not be required and stated it would remove the two
20 instances of the limitation. Unfortunately, a record of the verbal comment did not appear
21 in the official listing of comments received, nor did UDAQ's response to that
22 comment. Therefore, these two conditions were not removed from the final copy of
23 Section IX Part H that was presented to the Utah Air Quality Board (AQB) during the
24 September 2018 Utah AQB Meeting.
25

26 At that meeting, the AQB voted to drop all seasonal limitations in favor of imposing the
27 lower limit on an annual basis. In this particular case, that meant that BWO would be
28 shackled with a limitation of 300,000 scfd on an annual basis - a value that had never
29 been discussed or reviewed as BACT. When UDAQ reviewed BWO's proposal for a
30 seasonal limitation on flare gases, the proposal included two assumptions not present
31 during the September AQB decision. Seasonal limitations are imposed to control
32 emissions during periods when additional control is necessary because of atmospheric
33 conditions (chemistry, weather/climate) or because additional emissions are likely to
34 occur for reasons outside of that company's control (wildfires for example). When
35 seasonal limitations are imposed, the affected company can plan for the change - lowered
36 production, fuel switching, change in feedstocks, or the like. Simply changing a seasonal
37 limit to an annual limit does not take these types of changes into account. In BWO's case
38 in particular, the lower seasonal limitation was also being imposed after an extension of
39 two years - from January 1, 2019 to January 1, 2021. This was to allow BWO the
40 additional time to install equipment and processes necessary to cope with BWO's
41 potentially 200,000 scfd of process gas. Process gas which cannot be stored, sold,
42 vented, or recovered back into BWO's refining process. The September AQB decision
43 removed this extension period, and would require the lower limit be imposed
44 immediately - effectively forcing the refinery into non-compliance.
45

1 BACT in this case is to require BWO to meet the refinery general flare requirements of
2 IX.H.1.g.v.B and IX.H.11.g.v.B (the two requirements are identical):
3

4 *No later than January 1, 2019, all major source petroleum refineries in or*
5 *affecting any PM_{2.5} nonattainment area or a PM₁₀ nonattainment or maintenance*
6 *area shall either 1) install and operate a flare gas recovery system designed to*
7 *limit hydrocarbon flaring produced from each affected flare during normal*
8 *operations to levels below the values listed in 40 CFR 60.103a(c), or 2) limit*
9 *flaring during normal operations to 500,000 scfd for each affected flare. Flare*
10 *gas recovery is not required for dedicated SRU flare and header systems, or HF*
11 *flare and header systems.*
12

13 While this means that BWO is meeting only the baseline requirements established by
14 NSPS Subpart Ja, UDAQ has already discussed this in its BACT review for BWO (please
15 see the Technical Support Documentation - PM_{2.5} SIP Evaluation Report: Big West Oil,
16 LLC, July 1, 2018). BWO was specifically evaluated by EPA as a small refinery during
17 development of the NSPS and is cited as being “fuel gas long.” Meaning that as a result
18 of the specific refining processes in place at the BWO refinery, additional process gases
19 are generated that cannot be easily recovered and reused through typical flare gas
20 recovery. BWO must perform some amount of process flaring as no other means of
21 disposal of these gases exists.
22

23 Therefore, UDAQ recommends that the requirements of IX.H.2.a.vi.A and
24 IX.H.12.b.vi.A be removed entirely. The subsequent conditions of IX.H.2.a.vii and
25 IX.H.12.b.vii will be renumbered appropriately.
26
27

1 **Chevron Salt Lake Refinery**

2
3 **Comment Summary H-69: The commenter states that the flare flow requirements**
4 **should be consistent between the PM_{2.5} and PM₁₀ sections of the SIP.**

5
6 UDAQ Response to H-69: UDAQ agrees with this comment. This comment was
7 previously submitted as comment H-17 during the first comment period held between
8 August 1 and August 31, 2018. As stated in both versions of the comment, the language
9 present in the two sections of the SIP are nearly identical, but are inconsistent in
10 application. The commenter provided examples and proposed language that would
11 correct this inconsistency. Then and now, UDAQ agrees with the commenter that the
12 language should be applied appropriately. UDAQ clarified its position and included
13 revised language in its response to comments document. However, during revision of the
14 text of Section IX Part H prior to the September Air Quality Board Meeting, this
15 language was inadvertently left out of the final document. Therefore, UDAQ will update
16 the PM₁₀/PM_{2.5} language to read as follows:

17
18 ...petroleum refineries in or affecting any PM_{2.5} or any PM₁₀
19 nonattainment or maintenance area...

20
21 As stated in the previous response to comments, some requirements are still applicable to
22 all refineries regardless of source size (i.e. major source or minor source status) while
23 others are applicable to major sources only. It is not the intent of the language
24 clarification to change this applicability, only to establish that the requirements apply in
25 both PM₁₀ and PM_{2.5} areas.

26
27
28
29 **Comment Summary H-70: The commenter states that the application of certain**
30 **provisions of NSPS Ja to the [Chevron] Salt Lake Refinery is**
31 **inappropriate. [clarification added]**

32
33 UDAQ Response to H-70: UDAQ agrees with this comment. This comment was
34 previously submitted as comments H-14, H-15, H-18, H-20 and H-22 during the first
35 comment period held between August 1 and August 31, 2018. In essence, each of the
36 four established refineries operating catalytic cracking units inside the PM_{2.5}
37 nonattainment area commented that the requirement to install and operate a continuous
38 parameter monitoring system for determination of source-wide particulate matter
39 emissions. This requirement would be invalid on two levels. Those sources subject to
40 Subpart J rather than Subpart Ja already monitor different parameters than are required
41 under Subpart Ja - and for both subparts these monitoring requirements are applied to the
42 control device not to the calculation of emissions. For calculation of emissions,
43 Subsection IX.H.2.d.1.A (for Chevron, similar language can be found in the appropriate
44 location for each of the other refineries) provides for the use of stack tests to set emission
45 factors specifically for the catalytic cracking units.

Such determination was made by UDAQ in its previous response to comments document (see UDAQ response to comment H-14 in that document). UDAQ proposed language changes to requirements IX.H.1.g.i.B.III and IX.H.11.g.i.B.III. Unfortunately, during preparation of the final SIP document prior to the September Air Quality Board Meeting, these proposed language changes were inadvertently dropped. Therefore, UDAQ again proposes that the following revised language be included in subsections IX.H.1.g.i.B.III and IX.H.11.g.i.B.III:

Subsection IX.H.1.g.i.B.III

No later than January 1, 2019, each owner or operator of an FCCU subject to NSPS Ja shall install, operate and maintain a continuous parameter monitor system (CPMS) to measure and record operating parameters from the FCCU and control devices as per the requirements of 40 CFR 60.105a(b)(1). No later than January 1, 2019, each owner or operator of an FCCU not subject to NSPS Ja shall install, operate and maintain a continuous opacity monitoring system to measure and record opacity from the FCCU as per the requirements of 40 CFR 63.1572(b) and comply with the opacity limitation as per the requirements of Table 7 to Subpart UUU of Part 63.

Subsection IX.H.11.g.i.B.III

No later than January 1, 2019, each owner or operator of an FCCU subject to NSPS Ja shall install, operate and maintain a continuous parameter monitor system (CPMS) to measure and record operating parameters from the FCCU and control devices as per the requirements of 40 CFR 60.105a(b)(1). No later than January 1, 2019, each owner or operator of an FCCU not subject to NSPS Ja shall install, operate and maintain a continuous opacity monitoring system to measure and record opacity from the FCCU as per the requirements of 40 CFR 63.1572(b) and comply with the opacity limitation as per the requirements of Table 7 to Subpart UUU of Part 63.

The differences between the two subsections are specific to the type of particulate and nonattainment area in question for each subsection. Holly Frontier, which operates WGS systems on both FCCUs at its facility, has had specific language inserted into sections IX.H.2.f.i.A and IX.H.12.g.i.A to address the inability to measure opacity at WGS controlled Subpart J compliant FCCUs. That language is as follows:

... As an alternative to a continuous parameter monitor system or continuous opacity monitoring system for PM emissions from any FCCU controlled by a wet gas scrubber, as required in Subsection IX.H.1.g.1.B.III (alt. IX.H.11.g.i.B.III), the owner/operator may satisfy the opacity monitoring requirements from its FCC Units with wet gas scrubbers through an alternate monitoring program as approved by the EPA and acceptable to the Director.

1
2 **Comment Summary H-71: The commenter states that the requirement to install a**
3 **flare gas recovery system at Flare No. 3 is incorrect.**
4

5 UDAQ Response to H-71: UDAQ agrees with this comment. The commenter is correct
6 that the installation of flare gas recovery systems were never intended to be installed for
7 specific types of exempted flare systems, as the flare gases from these systems could not
8 be recovered and reintroduced into the fuel gas system of the refinery. These exempted
9 flare systems included both SRU flares and header systems and HF flares and header
10 systems. In the case referenced by the commenter, Flare No. 3 is the flare directly tied to
11 the Chevron Salt Lake Refinery's HF Alkylation Unit - i.e. the HF flare for the
12 refinery. Therefore, UDAQ agrees with the commenter's proposal to correct Subsections
13 IX.H.2.d.vii and IX.H.12.d.vii to remove the reference to Flare No. 3.
14

1 **Northrop Grumman (ATK)**

2
3 **Comment Summary H-72: The commenter stated that in its review of Part H.12.a.iii**
4 **of the Plan regarding annual stack testing for natural gas boilers in buildings M-576**
5 **and M-14 there is no reason or analysis as to how an annual stack testing frequency**
6 **was derived in regards to emissions reduction/control. ATK states that they are not**
7 **aware of a cost benefit analysis that determines the cost of annual testing provides**
8 **more meaningful emissions control than the three year frequency. ATK is**
9 **requesting an additional evaluation of why annual stack testing on natural gas**
10 **boilers provides better emission control than a three year frequency.**
11

12 UDAQ Response to H-72: [See UDAQ Response to Comment H-67]
13

1 **PacifiCorp**

2
3 **Comment Summary H-73: The commenter disagrees with the decision to remove**
4 **the seasonally variable emission limit on PacifiCorp's Gadsby Power Plant Unit**
5 **#3. The seasonal limit should be reinstated allowing the unit to operate as needed**
6 **during peak load requirements.**
7

8 UDAQ Response to H-73: UDAQ agrees with this comment. At the September 2018
9 meeting of the Utah Air Quality Board (AQB), the AQB voted to remove seasonally
10 variable emission limits and instead impose the lower or more restrictive emission limit
11 on an annual basis. In the case of the Gadsby Power Plant, such a seasonal limitation
12 existed for Unit #3, a natural gas-fired boiler with a "summertime" limit of 203 lbs/hr
13 applicable between March 1 and October 31, and a "wintertime" limit of 142 lbs/hr
14 applicable between November 1 and the end of February (28th or 29th during leap
15 years). The decision of the AQB would make the 142 lbs/hr limit applicable on an
16 annual (year-round) basis. The commenter provided two main arguments for
17 reinstatement of the seasonal limitation:
18

- 19 1. The annual limitation would restrict the unit's summertime operating flexibility,
20 constraining the source's ability to meet customer load requirements - especially
21 during the summer months when peak loads are highest.
- 22 2. This decision appears to be in direct opposition to UDAQ's previous determinations
23 that seasonal limitations were BACT and were not arbitrary.
24

25 UDAQ agrees with both of these arguments. The first use of "wintertime" limitations
26 was during development of the PM10 SIP. Broadly, the period of highest ambient
27 particulate levels is found during wintertime inversions - so the restriction of particulate
28 and precursor emissions during these periods can be a useful work practice to reduce
29 overall ambient concentrations. This can be especially useful in those cases when the use
30 of add-on controls have been eliminated for technical or economic feasibility reasons.
31 Not restricting operations or emission rates during "summertime" periods allows the
32 source the flexibility to adjust for increased demand when needed - most often outside the
33 timeframe of highest particulate concentration.
34

35 UDAQ previously addressed a public comment received during the first comment period
36 (August 1 through August 31, 2018). In its response to Comment 33, UDAQ explained
37 that it was not arbitrary to allow seasonal limits in one instance, but not another, because
38 while Gadsby Unit 3 had seasonal controls, it also has limits that apply year-round, and
39 that those limits were considered BACT. UDAQ also explained that the BACT analysis
40 for Gadsby was based on actual emissions, and it was determined that the installation of
41 additional controls was not economically feasible. UDAQ also noted that Gadsby's
42 seasonal limits only apply to the lb/hr limit, and that Gadsby's concentration-based NOx
43 limits do not change on a seasonal basis.
44

1 As Gadsby Unit #3 has historically had NOx emissions that are within the summertime
2 limits, but would be in excess of wintertime limits, UDAQ submits that the appropriate
3 resolution is to reinstate the seasonal limitation on Gadsby Unit No. 3.
4

1 **Rio Tinto**

2
3 **Comment Summary H-74: UDAQ Correctly Proposed that KUC Stack Test the**
4 **Holman Boiler, Refinery Boilers, and In-Pit Crusher Every Three Years**

5
6 UDAQ Response to H-74: [See UDAQ Response to Comment H-67]
7

8 **Comment Summary H-75: UDAQ Correctly Determined that BACT for Unit 4 Does**
9 **Not Require a Fuel Switch to Natural Gas**

10
11 The commenter objects the decision of the Air Quality Board (AQB) during the October
12 3 meeting to prohibit KUC from combusting coal at any time at Unit 4. In response to
13 this decision, DAQ revised the November version of Part H to only authorize Unit 4 to
14 operate on natural gas and removed the seasonal provisions related to coal combustion at
15 Unit 4.
16

17 The commenter agrees with DAQ's Memo "Response to Board Motion on SIP", which
18 argued that fuel switching should not be considered BACT as part of this SIP. DAQ
19 stated that since Unit 4 has the seasonal prohibition on coal burning during the inversion
20 season, prohibiting coal burning during the summertime will have no impact in
21 controlling the emissions that contribute to the wintertime inversion season. Therefore,
22 fuel switching is not an appropriate BACT measure for this SIP.
23

24 Given the facts stated in DAQ's Memo "*coupled with the limitations imposed by Utah*
25 *Code section 19-2-109, there is no foundation for the AQB to make a determination that*
26 *the imposition of controls on Unit 4's coal operations are necessary for the PM2.5 SIP.*"
27

28 The commenter also states that BACT does not preclude UDAQ/AQB from applying
29 seasonal controls on Unit 4. The commenter states that "EPA has repeatedly embraced
30 the idea that a SIP may address a pollutant that manifests itself with greater seasonal
31 concentrations with controls and limitations that apply during a season". The commenter
32 specifically points out to EPA's guidance referring to seasonal emissions considerations
33 for ozone SIPs.
34

35 The commenter also points out a response to a 1998 comment on the NOx SIP call where
36 EPA rejected the notion that EPA could use ozone SIP to address non-ozone problems.
37 The commenter stated that "*UDAQ's memo raises the specter that the focus on Unit 4's*
38 *coal operations may be motivated by a goal of attacking non-PM2.5 issues, such as*
39 *controlling emissions impacting ozone concentrations in the summertime. As EPA*
40 *explained in the NOx SIP call, it is not appropriate to use a SIP that is designed to bring*
41 *an area into compliance with a particular NAAQS to attack an unrelated problem.*"
42

43 The commenter requests that "*UDAQ revise Part H to (1) allow for both natural gas and*
44 *coal combustion at Unit 4, and (2) re-insert the seasonal prohibition on coal combustion*
45 *between November and the end of February.*"
46

1 **UDAQ Response to H-75:**

2
3 As stated in DAQ's Memo "Response to Board Motion on SIP" and in Comment 1 of the
4 "Comments on Notice of Proposed Rule, Section IX, Emission Limits and Operating
5 Practices, Part H" submitted by UDAQ, the UDAQ does not agree with the AQB motion
6 that fuel switching should be considered BACT for Unit #4.

7
8 UDAQ agrees that controls for the PM2.5 SIP should have the primary purpose of
9 controlling emissions that contribute to the wintertime air shed. UDAQ also stated that
10 fuel switching may be a more appropriate BACT determination under different
11 circumstances, such as for the ozone SIP or as a BACT analysis for a permitting action.

12
13 As such, UDAQ will reinstate the Part H provisions allowing coal to be combusted
14 during summertime.

15
16 **Comment Summary H-76: UDAQ Applied Overly Aggressive Control Efficiencies**
17 **to Arrive at an Unrealistic Emission Limitation For Unit 4's Natural Gas**
18 **Operations**

19
20 UDAQ proposed a NOx limit of 20 ppmvd (17 lbs/hr) for Unit 4 when combusting
21 natural gas. This limit accounts for the BACT controls of over-fired air (OFA), low NOx
22 burners (ULNB), and Selective Catalytic Reduction (SCR), as detailed in the TSD
23 document dated July 1, 2018. This limit was based on a 50% reduction from OFA and
24 ULNB and 90% from SCR.

25
26 The commenter "*objects to the 20 ppmv (17 lbs/hr) emission limitation because UDAQ*
27 *derived the emission limitation from overly-aggressive control efficiencies resulting from*
28 *the installation of SCR and OFA.*" The commenter stated that "*emission limitations that*
29 *are unrealistic, based on overly-aggressive control efficiencies, or derived from best-case*
30 *scenario operations do not represent BACT and cannot be implemented.*"

31
32 KUC commissioned a site-specific study to evaluate potential controls at Unit 4. Results
33 of this study were originally submitted in May 2018 and were again included with the
34 public comments received on November 30, 2018. The study identified OFA and SCR as
35 potential control options and suggested a range of control efficiencies for these
36 technologies. Based on the information from this study, KUC proposed control
37 efficiencies of 75% for SCR and 30% for OFA, and a resulting NOx limitation of 60
38 ppmvd.

39
40 The commenter stated that "*there are significant questions as to the likelihood that SCR*
41 *and OFA will, in fact, meet either of these control efficiencies, and, in turn, that KUC can*
42 *consistently meet the 20 ppmv emission limitation at Unit 4.*"

43
44 **UDAQ Response to H-76:**

KUC believes that DAQ used overly-aggressive control efficiencies for natural gas operations and has proposed different control efficiencies for OFA and SCR for natural gas operations. Below is a comparison of the control efficiencies used by DAQ versus the control efficiencies proposed by KUC. The control efficiencies proposed by KUC are based on vendor estimates provided in the May 2018 study, which assumed same control efficiencies for both natural gas and coal. KUC is only requesting a change to the natural gas control efficiencies. The control efficiencies from DAQ were proposed in the BACT analysis in the TSD document dated July 1, 2018.

Table H-76.1 – Control Efficiencies and BACT Limits Comparison

Control	Proposed Control Efficiencies	
	DAQ	KUC
OFA	50%	30%
ULNB / LNB		Not evaluated
SCR	90%	75%
NOx Limits		
Current NOx Limit	336 ppmvd (306 lb/hr)	
Proposed NOx Limit	20 ppmvd / 17 lb/hr / 0.02 lb/MMBtu	60 ppmvd / 54 lb/hr / 0.06 lb/MMBtu

Stack Test Results

DAQ reviewed NOx concentrations and emission rates from stack tests conducted between 2010 and 2017. Results from these stack tests for NOx emissions from Unit 4 are summarized below. As shown in Table H-76.2, NOx concentrations from natural gas combustion have been measured at 25% to 46% of the current Approval Order (AO) (DAQE-AN105720031-15) limit of 336 ppm. The table below also shows resulting emission limits if control efficiencies are applied to stack test results. Both KUC's and DAQ's proposed controlled efficiencies were applied. For a conservative estimate, control efficiencies were only applied to the maximum stack test result.

Table H-76.2 – Post-Control Emission Based on Stack Test Data

Control	Natural Gas
Emission Limit <i>ppm (lb/hr)</i>	336 (306)
Stack Test Results (2010 – 2017)	
Max NOx <i>ppm (lb/hr)</i>	154 (165)
% Emission Limit	46% (54%)
Min NOx <i>ppm (lb/hr)</i>	82.3 (67.3)
% Emission Limit	25% (22%)
Resulting Post-Control Emission Limits	
<i>Based on DAQ Control Efficiencies</i>	
Emission Limits	7.7 ppm / 8.2 lb/hr /

	0.01 lb/MMBtu
<i>Based on KUC Control Efficiencies</i>	
Emission Limits	27 ppm / 29 lb/hr / 0.03 lb/MMBtu

By applying DAQ's proposed control efficiencies to actual emission data, NO_x concentrations and emission rates are much lower than the proposed limits. By applying KUC's proposed control efficiencies to actual emission data, NO_x concentrations are estimated at 27 ppmvd, slightly higher than the proposed limit of 20 ppmvd. The emission rates are estimated at 29 lb/hr and 0.03 lb/MMBtu, higher than their respective proposed emission limits of 17 lb/hr and 0.02 lb/MMBtu.

Although stack test data indicates that NO_x from natural gas combustion is significantly lower than the current AO limit, there is also significant variability in the emission rates. For instance, the maximum concentration is almost double the minimum concentration (154 ppm vs 82.3 ppm). DAQ acknowledges that with this variation in emission rates, a compliance buffer may be appropriate to account for operational fluctuations.

Low NO_x Burners

As shown in Table H-76.1, ultra-low NO_x and low NO_x burners were not evaluated as part of the May 2018 study. As stated in the comment, Unit 4 currently utilizes a low NO_x burner. KUC stated that since the unit is already equipped with a low NO_x burner, further evaluation of this technology was not conducted on the assumption that additional emission reductions would not be achieved. However, DAQ does not have records of when the low NO_x burners were installed and the NO_x rating for such burners. Based on DAQ's records, the NO_x limit of 336 ppm (306 lb/hr) for natural gas operations has remained unchanged since at least the 1994 SIP. The NO_x limit for coal operations in the 1994 SIP was listed as 597 ppmvd, higher than the current uncontrolled NO_x limit of 384 ppm in subsequent SIPs. Since the only NO_x limit that has changed is related to coal, it is possible that the low NO_x burner referred to in the comment was installed for coal operations, not natural gas. Due to the lack of information on this issue, DAQ speculates that there are three possibilities: 1) The low NO_x burner was only installed for coal; 2) Unit 4 is equipped with a low NO_x burner which was most likely installed before 1994; 3) A low NO_x burner was installed but the NO_x rating of this burner is unknown and permitted emission limits were not updated to account for the low NO_x burner.

None of the above-mentioned possibilities precludes ultra-low NO_x and/or low NO_x burners for natural gas combustion from being evaluated as part of BACT. DAQ believes that ultra-low NO_x burners and/or low NO_x burners should have been evaluated as part of the study and the BACT analysis for this unit. Even if a low NO_x burner has been installed at Unit 4, currently available burner technology should be evaluated as those will have higher control efficiencies.

Furthermore, the BACT emission limit for this SIP is being estimated based on the uncontrolled baseline emission rate of 336 ppm, as shown in Table H-76.1. If a low NO_x

burner was installed at Unit 4, then the starting baseline emission rates should be lower than 336 ppm, which would result in different control efficiencies than proposed.

As previously stated, DAQ proposed a 50% control efficiency for both OFA and low NO_x burners in the TSD BACT analysis. DAQ is not disagreeing with the control efficiency of 30% for OFA alone, as proposed by KUC. However, DAQ cannot reduce the proposed control efficiency for pre-SCR controls to 30% when one of the control technologies identified in the TSD BACT analysis was not evaluated as part of the May 2018 study nor accounted for in the proposed control efficiency for this comment.

SCR System Design

The SCR will control emissions after OFA and low NO_x burner. DAQ understands that the design for a SCR system would be based on the following:

- The SCR would be sized based on emission profile and operating parameters (flow rates, temperatures, etc) from coal combustion.
- More ammonia would be required to control emissions from coal than natural gas.
- The SCR would likely be designed with two injection skids, one to provide higher ammonia injection rates during coal combustion and another to provide lower ammonia injection rate during natural gas combustion.
- The SCR system would be equipped with inlet and outlet NO_x monitors to adjust the ammonia quantity needed in the flue gas stream to achieve the required NO_x reduction. This type of monitoring would allow the system to quickly adjust for different loads and concentrations.

DAQ consulted with engineering firms that typically design and install SCRs and confirmed that 90% control efficiency for SCR is a typical requirement and design parameter. The target removal efficiency for a system can be maintained with proper monitoring and design. According to EPA and vendor literature, SCR control efficiencies usually range from 70% to 95%. Some of the factors that affect SCR control efficiency include boiler type, age of catalyst, acceptable ammonia slip, fuel type, and flue gas temperature. Vendor estimates from the May 2018 study were based on 80% control efficiency and KUC has proposed 75% control efficiency. DAQ proposes to use the vendor estimate of 80% control, which is based on site-specific knowledge of the unit as well as engineering judgement from design experience.

Conclusion

DAQ does not agree with reducing the pre-SCR control efficiency to 30% because low NO_x burners were not evaluated. DAQ proposes to use the vendor-provided estimate of 80% for the SCR control efficiency. This control efficiency is within the typical SCR control efficiencies for natural gas combustion but also adds a compliance buffer to account for variability in measured emission rates, age of the boiler, and any other uncertainties. By applying these control efficiencies to the 336 ppm NO_x limit, the new emission limit is estimated at 33 ppm. This value is comparable to the post-control emissions of 27 ppm estimated based on actual stack test data and KUC's proposed control efficiencies, as shown in Table H-76.

Therefore, DAQ proposes to update the NO_x limit to 30 ppmvd. Corrections were made to the estimates for emission rates in lb/hr and lb/MMBtu. The equivalent limit proposed is: 30 ppmvd/ 32 lb/hr / 0.04 lb/MMBtu.

In summary, DAQ proposes to revise the NO_x BACT limits in Section IX.H.12.j.i.A.II.2 to 30 ppmvd/ 32 lb/hr / 0.04 lb/MMBtu, based on the following.

- KUC neglected to evaluate a common control option (low NO_x burners) which would further reduce NO_x emissions. Low NO_x burners, combined with OFA and SCR are common controls for natural gas and coal-fired units listed in EPA RBLC database. Low NO_x burners were also included as part of the TSD BACT determination for this Unit. Therefore, DAQ maintained the 50% control efficiency determined to be BACT for OFA and low NO_x burners.
- Given actual emission rates from stack tests, the limit proposed by DAQ is achievable. However, the limit was raised based on a less stringent SCR control efficiency to account for variability in measured emission rates, age of the boiler, and any other uncertainties.
- NO_x emissions from coal are much higher than from natural gas, yet KUC is proposing an emission limit that is very close (60 ppm for natural gas and 80 ppm for coal). SCR system can be adjusted to optimize ammonia injection rates for coal and natural gas, so removal efficiency can be maximized. As such, DAQ sees no reason to have such a narrow range of limits for natural gas and coal.

Comment Summary H-77: The VMT Limit for the Bingham Canyon Mine Should Apply Only to Diesel-Fired Haul Trucks

DAQ has included a daily mileage cap in PM₁₀ SIP (Condition H.2.g.i.A) and in the proposed PM_{2.5} Serious SIP (Condition H.12.h.i.A). These conditions limit the maximum daily mileage for ore and waste haul trucks to 30,000 miles.

The commenter has requested that this limit apply to diesel-powered haul trucks only. This revision “would acknowledge the purpose of the limitation and provide KUC with the flexibility to explore the viability of alternatively-powered haul trucks at the BCM.”

Specifically, “KUC is interested in the possibility of bringing alternatively-powered haul trucks to the fleet of vehicles that operate at the BCM if these vehicles become available. However, KUC is concerned that the SIP as it is currently proposed could create an impediment to testing and deploying alternatively-powered haul trucks at the BCM. For example, alternatively-powered haul trucks may not be as large as KUC's largest haul trucks. If that were the case, the limitation on vehicles miles traveled - if applied beyond the diesel fired fleet - could create a disincentive to deploying alternatively-powered haul trucks at the BCM.”

The commenter has requested this revision for both Condition H.2.g2i.A in the PM₁₀ SIP and Condition H.12.h.i.A in the PM_{2.5} SIP.

UFAQ Response to H-77:

The DAQ agrees with making this change in an effort to encourage KUC to use alternatively-powered haul trucks at the BCM.

One potential concern is that the increased traffic from alternatively-powered haul trucks could increase fugitive emissions from the BCM. However, DAQ believes that the KUC BCM AO (DAQE-AN105710042-18) has other limitations that appropriately limit fugitive emissions. For instance:

- Condition II.B.1.e: *Total material moved (ore and waste) shall not exceed 260,000,000 tons per rolling 12-month period.*

This limit will indirectly control fugitive emissions by limiting the amount of material that can be removed from the mine.

- Condition II.B.1.f: *The following site-wide emission limits at the BCM shall not be exceeded:*

A. 7,350 tons of NOx, PM10 and SO2 combined per rolling 12-month period.

B. 6,205 tons of NOx, PM2.5 and SO2 combined per rolling 12-month period.

This limit applies to facility-wide operations, which includes fugitive emissions. Fugitive emissions for haul roads are estimated based on the number of miles travelled inside the pit and outside the pit from all haul traffic. This would include any new alternatively-powered haul trucks.

DAQ will make the following changes to Part H:

Condition H.2.g.i.A. Maximum total mileage per calendar day for diesel-powered ore and waste haul trucks shall not exceed 30,000 miles.

Condition H.12.h.i.A. Maximum total mileage per calendar day for diesel-powered ore and waste haul trucks shall not exceed 30,000 miles.

Comment Summary H-78: The "Implementation Schedule" for Haul Trucks in Part H.2 Should Be Removed

Condition H.2.g.i.D of the PM10 SIP states that "KUC shall purchase new haul trucks with the highest engine Tier level available which meet mining needs. KUC shall maintain records of haul trucks purchased and retired."

This condition was originally proposed in the July version of Part H.12, but was removed from Part H.12 as documented in Response to H-38 of the *October 3, 2018 Memo to the AQB proposing for public comment amended Part H.*

1
2 The commenter stated that “*UDAQ retained the provision in Part H.2. KUC understands*
3 *that UDAQ believes that Condition H.2.g.i.D remains viable and outside of Title II's*
4 *preemption because it is tied to the 30,000 vehicle miles traveled, which is not an*
5 *emission standard.*”

6
7 Specifically, the commenter mentioned a US Supreme Court definition applied to
8 “*California regulation that dictated the composition of vehicles purchased by public and*
9 *private fleet operators and found that such fleet restrictions were in preempted by Title*
10 *II.*
11 *A command, accompanied by sanctions, that certain purchasers may buy only vehicles*
12 *with particular emission characteristics is as much an 'attempt to enforce' a 'standard' as*
13 *a command, accompanied by sanctions, that a certain percentage of manufacturer's sales*
14 *volume must consist of such vehicles.*”

15
16 The commenter stated that this condition is in conflict with Title II as it “*instructs KUC*
17 *that it may only buy certain haul trucks which meet particular emission characteristics*”

18
19 The commenter also stated that the intent of this condition is unclear since federal
20 regulations already dictate “*what haul trucks KUC may purchase and deploy at the*
21 *BCM*”

22
23 **UDAQ Response to H-78:**

24
25 Agreed. UDAQ will remove Condition H.2.g.i.D from the PM10 SIP.
26

Tesoro Refining & Marketing Company

Comment Summary H-79: The commenter stated that Stack Test Frequencies for FCCUs is sufficient to ensure the units are operating as designed. Tesoro stated additional risks associated with the testing location (elevated 200') and weather related. Tesoro also stated that the continuous compliance demonstration using CPMS ensures operation of the equipment as designed as shown through the last two stack testing events where emissions were less than 50% of the established limit.

UDAQ Response to H-79: [See UDAQ Response to Comment H-67]

Comment Summary H-80: The commenter suggested edits to two refinery general requirements - IX.H.1.g.i.B.III and IX.H.11.g.i.B.III. This comment is similar to comment H-70 list above, and is identical to comment H-22 of the original comment period (August 1 through August 31, 2018).

UDAQ Response to. H-80: UDAQ agrees with this comment. Please see UDAQ's response to comment H-70 for a complete analysis and UDAQ's proposed resolution.

Comment Summary H-81: The commenter supplied additional information to support the claim that SCR should not be considered as BACT for application on the Tesoro Refinery cogeneration turbine units.

UDAQ Response to H-81: UDAQ agrees with this comment. The commenter correctly points out that it would be extraordinarily difficult to design, engineer, construct and install a SCR system for the cogeneration units by the regulatory attainment date of December 31, 2019. No credit can be taken for any BACM or more specifically BACT which is installed after the attainment date. This is clarified in the rule under the requirements for attainment demonstration for nonattainment areas reclassified as Serious – see 40 CFR 41.1011(b)(5):

Required timeframe for obtaining emissions reductions. For each Serious nonattainment area, the attainment plan must provide for implementation of all control measures needed for attainment as expeditiously as practicable. All control measures must be implemented no later than the beginning of the year containing the applicable attainment date, notwithstanding BACM implementation deadline requirements in § 51.1010.

Thus, for any BACM/BACT to be included for emission reductions, it must be implemented no later than the beginning of the year containing the regulatory attainment date, i.e. on or before January 1, 2019. In order for a control system to be in operation by January 1, 2019, it must be constructed no later than December 31, 2018. As this response to comments document is being prepared for final action by the Utah Air Quality Board at the January 2019 meeting, it is impossible for such construction to even

1 be authorized, let alone completed by this deadline. SCR does not constitute BACT in
2 this case. This was also addressed in UDAQ's response to comment H-24 in the first
3 response to comments document covering the original comment period (August 1 to
4 August 31, 2018). Specifically, see the section addressing Most Stringent Measures
5 (MSM) in that comment response. No changes are necessary to either the language of
6 Part H or the technical support documentation, as this comment response should be used
7 in conjunction with that document.
8
9

1 **University of Utah**

2
3 **Comment Summary H-82:** The commenter stated that the impact from proposing
4 an increase in stack testing from every three years to annual would burden
5 operations without any commensurate benefits such as increased efficiency or
6 reduced emissions. Commenter also stated that stack testing preparation and
7 execution requires a significant time commitment from environmental staff, and has
8 the potential to distract from other environmental efforts across the campus. The
9 University of Utah also concurred with UDAQ that annual stack testing would
10 result in an estimated \$30,000 per year in added stack testing expenses.

11
12 UDAQ Response to H-82: [See UDAQ Response to Comment H-67]

13 **Utah Manufacturers Association**

14
15 **Comment Summary H-83:** The commenter was focused on the issue of stack testing
16 frequency required by Part H of the Serious Area PM2.5 SIP for the Salt Lake City
17 Nonattainment Area. Commenter stated that the purpose of stack testing is to
18 assure compliance with emission limitations but went on to state that stack tests are
19 resource intensive and costly to conduct. Substantial up-front planning to develop
20 and approve the test protocol, obtain bids from stack test vendors, select the stack
21 test firm and to coordinate test dates with production runs all require consideration
22 when determining a stack testing frequency.

23
24 **Commenter stated that a member company is currently required to test three**
25 **sources for NOx, CO, and PM2.5 once every three years. The stack testing costs**
26 **\$35,000 to perform over a four-day period. This testing also requires two week's**
27 **worth of time by the company, including a week of preparation and another week**
28 **for coordination during the week of the stack test. Commenter concluded that**
29 **increasing the frequency to require an annual stack test, the company's cost, time**
30 **and resources would increase by 200% (i.e., \$70,000 in costs and 4 weeks of staff**
31 **effort over the current base).**

32
33 UDAQ Response to H-83: [See UDAQ Response to Comment H-67]
34

1 **Utah Petroleum Association**

2
3 **Comment Summary H-84: [submitted by the Utah Petroleum Association**
4 **(UPA)]: Scope of Comment: In view of the procedural history of the Part H**
5 **rulemaking, UPA understands that the entirety of the revisions being proposed to**
6 **Part H as part of the PM_{2.5} SIP BACT rulemaking – including those initially noticed**
7 **for public comment in the July 1, 2018 Utah State Bulletin – are properly subject to**
8 **comment during the current comment period. UPA furthermore requests that**
9 **UDAQ respond to comments made by UPA on the original Part H rulemaking that**
10 **it appears were inadvertently overlooked; specifically, Enclosure 2 to UPA’s August**
11 **15, 2018 comments (Revisions to Section IX, Control Measures for Area and Point**
12 **Sources, Part H. Emission Limits, Specific Comments on Parts H.1, H.2, H.11, &**
13 **H.12).**

14
15 UDAQ Response to H-84: UDAQ regrets any confusion about the scope of comments
16 that could be made regarding Part H. The intent was to solicit only those comments
17 addressing new issues proposed for comment at the October UAQB, and potentially
18 avoid a high volume of comments that had already been made. UDAQ did received a
19 small few comments addressing issues that opened for review in July, and these
20 comments have been addressed herein.

21
22 UDAQ is also responding to comments made by UPA in Enclosure 2 to its August 15,
23 2018 comments. These comments were in fact overlooked during the previous comment
24 period, but are now addressed in H-86 through H-91.

25
26 **Comment Summary H-85: [submitted by the Utah Petroleum Association**
27 **(UPA)]: Provisional adoption of Part H: In previous comments UPA noted the**
28 **importance of the Board determining that the Part H controls are necessary for**
29 **achieving attainment of the PM_{2.5} NAAQS. Those comments also included a report**
30 **discussing the results of major stationary source precursor demonstrations**
31 **performed for all four PM_{2.5} precursors. These demonstrations show that**
32 **controlling any of these precursors from “major” sources would have an**
33 **insignificant effect of PM_{2.5} levels, and that therefore, *additional* precursor controls**
34 **on major stationary sources are not necessary.**

35
36 UDAQ has indicated its intention to complete its own analysis, and UPA appreciates
37 the efforts in this regard. UPA understands that this is a significant undertaking,
38 and that it will likely be several months before UDAQ can reach a definitive
39 conclusion. Also noted is that UDAQ’s precursor demonstration should be subject
40 to public review and comment.

41
42 However, UDAQ has also expressed the need to continue with the rulemaking
43 process required to implement BACT in the event that such additional controls are
44 ultimately deemed necessary. UPA acknowledges the need for all necessary
45 rulemaking to be completed timely.

1 **UPA believes that these efforts – UDAQ’s completion of its precursor demonstration**
2 **and continued development of potential BACT – can and should proceed on parallel**
3 **tracks.**

4
5 **UPA believes it would be most appropriate for UDAQ to have entirely completed its**
6 **precursor demonstration – including notice and public comment – prior to making**
7 **any decision on the Part H rulemaking. However, to the extent that UDAQ**
8 **determines, for administrative or other reasons, to proceed with a final rulemaking**
9 **on the proposed Part H rulemaking, we urge the Agency to do so provisionally,**
10 **making a revised Part H effective contingent upon the outcome of a final decision on**
11 **the precursor demonstration.**

12
13 **In doing so it could follow an approach similar to that taken when the Board**
14 **provisionally adopted an alternative offset requirement as part of the PM₁₀ SIP**
15 **rulemaking. UDAQ would thereby accommodate the Utah Air Conservation Act,**
16 **the Utah Administrative Rulemaking Act, and the Clean Air Act and federal SIP**
17 **rulemaking requirements.**

18
19 UDAQ Response to H-85: As stated in the responses to Comment A-16 (*UPA comments*
20 *urging inclusion of major stationary source precursor demonstrations*), UDAQ is
21 electing not to include a major stationary source precursor demonstration for any of the
22 PM_{2.5} precursors at this time.

23 Had UDAQ instead elected to do so, the commenter makes a valid point in that EPA
24 would still have had to approve the demonstration in order that BACT controls for such
25 pollutant(s) would thereby not be required, and this takes time. Meanwhile, by state law,
26 a source may have been faced with a deadline for purchase and installation of control
27 equipment which ultimately may not have been required. Had this been the case, a
28 provisional construction of Part H could have been a suitable path. Since, however, a
29 major stationary source precursor demonstration will not be part of the SIP. It will not be
30 necessary to wait for EPA to render its decision on any such precursor demonstration.
31 Part H may be acted upon by the UAQB without delay.

32
33 **Comment Summary H-86: The commenter suggests that the use of all EPA-**
34 **approved test methods should be allowable, and that the words “acceptable to the**
35 **Director” should be stricken from the general requirements of IX.H.1.e and**
36 **IX.H.11.e.**

37
38 UDAQ Response to H-86: UDAQ disagrees with this comment. UDAQ has previously
39 responded to this concept during its response to comment H-20 of the first set of
40 comments received during the original comment period held August 1 through August
41 31, 2018. In that response, UDAQ expressed that it was not the intent of the phrase
42 “acceptable to the Director” to imply that the Director would not find an EPA-approved
43 testing method acceptable generally. Rather, when the source wishes to use a testing
44 method to demonstrate compliance with a particular emission limit found in IX.H.2,
45 IX.H.3, IX.H.12 or IX.H.13, the choice of testing method must be acceptable to the
46 Director as well as being an EPA-approved testing method. The acceptance of the

Director is to prevent the source from choosing an inappropriate (although EPA-approved) testing method - such as using an SO₂ test to demonstrate compliance with a NO_x emission limitation. Obviously such a test would be incorrectly applied, but the removal of the acceptability phase as suggested by the commenter would allow for such a possibility to occur. The language “acceptable to the Director” will not be removed. Sources already have the ability to suggest and use alternative EPA-approved tests at any time; this language simply requires that the source receive approval prior to performing the test.

Comment Summary H-87: The commenter suggests that the use of AP-42 emission factors should not be prescribed, and that the words “or other EPA-approved methods” should be added to allow for flexibility.

UDAQ Response to H-87: UDAQ agrees with this comment. During development of the stack testing requirements for FCC units at the refineries, the ability to update or change emission factors through stack testing was inadvertently removed from several sections of IX.H.2 and IX.H.12 (specifically: IX.H.2.a.i.B, IX.H.2.a.ii.B, IX.H.2.d.i.B, IX.H.2.d.ii.B, IX.H.2.k.i.B, IX.H.2.k.ii.B, IX.H.12.a.i.B, IX.H.12.a.ii.B, IX.H.12.d.i.B, IX.H.12.d.ii.B, IX.H.12.k.i.B, and IX.H.12.k.ii.B). Including the commenter’s suggested language allows these sources to update emissions factors as originally intended. Some other minor language changes will be made where appropriate and necessary to allow for proper grammar and natural english phrasing. In addition, a change will be made in the sections listed in the parenthetical section above to again allow for updating of emission factors through stack testing as originally intended.

Comment Summary H-88: The commenter believes that the general testing requirements for PM₁₀ and PM_{2.5} should be consistent.

UDAQ Response to H-88: UDAQ agrees with this comment. It was the intention of UDAQ to update the PM₁₀ section of the general requirements (section IX.H.1) and the PM_{2.5} section of the general requirements (section IX.H.11) to be as identical as possible. Subsection IX.H.11.e.i.B provides for the use of either EPA Test Method 2 or Method 19. However, Subsection IX.H.1.e.i.B provides for the use of only EPA Method 2. Therefore, Subsection IX.H.1.e.i.B (PM₁₀) should be modified to include Method 19 as an acceptable method in order to be consistent with Subsection IX.H.11.e.i.B (PM_{2.5}). Similarly, Subsections IX.H.1.e.i.C and IX.H.11.e.i.C should be modified to provide for the use of EPA Methods 5B, 5F and 17, since the use of these methods is necessary to monitor the emissions from sulfur recovery plants.

Comment Summary H-89: The commenter disagrees with the use of the terms “particulate matter” and “PM” as these terms are undefined, and wants UDAQ to use only the defined terms PM₁₀ and PM_{2.5} in the SIP and supporting documents.

UDAQ Response to H-89: UDAQ disagrees that the terms “particulate matter” and “PM” are ambiguous given their use in the context of the Utah SIP and specifically within the PM₁₀ and PM_{2.5} sections of the Utah SIP. PM in particular is of use in conjunction with

1 stack testing requirements, as Method 5 series tests and Method 17 are both general
2 particulate matter tests and do not fractionate the collected material into the more specific
3 PM10 or PM2.5. Indeed, the commenter requested the addition of additional particulate
4 matter testing in its previous comment (see Comment H-88). There is only one
5 occurrence of the term “particulate matter” in the language of Section IX, Part H, which
6 is clarified by an immediate subsequent parenthetical of (PM2.5). No changes to the
7 language of Part H are required.

8
9 **Comment Summary H-90: Applying Federal Clean Air Act NSPS Ja Requirements**
10 **to Facilities Subject to NSPS J is Inappropriate.**

11
12 UDAQ Response to H-90: This comment is essentially identical to comment H-70
13 included above. UDAQ agrees with this comment. For details on UDAQ’s analysis and
14 UDAQ’s proposed resolution, please see the response to comment H-70.

15
16 However, the commenter did bring up one additional point not previously covered in
17 comment H-70, or any of the comments provided during the original comment period of
18 August 1 through August 31, 2018. As part of the corrections to address the
19 misapplication of Subpart Ja, Subsections IX.H.1.g.i.A.II and IX.H.11.g.i.A.II also need
20 to be updated to remove the phrase “by following 40 C.F.R. §60.105a(g).” and replacing
21 it with the phrase “using a CEM in accordance with IX.H.1.f.” (in the case of Subsection
22 IX.H.1.g.i.A.II) or “using a CEM in accordance with IX.H.11.f.” (in the case of
23 Subsection IX.H.11.g.i.A.II).

24
25 **Comment Summary H-91: Petroleum Refineries FCCU Particulate Matter**
26 **Emission Limit Should Not Be Based on 3-hour Average Basis.**

27
28 UDAQ Response to H-91: UDAQ agrees with this comment. The commenter is correct
29 in pointing out that the emission limit in Subsections IX.H.1.g.i.B.I and IX.H.11.g.i.B.I is
30 1.0 lbs per 1000 lbs of coke burned. The SIP expressly requires that compliance with this
31 emission limit be determined in accordance with the stack test protocol provided in NSPS
32 J or NSPS Ja. The stack test protocol under NSPS J requires that the “sampling time for
33 each run shall be at least 60 minutes.” Separately, NSPS Ja requires that particulate
34 matter performance tests “consist of 3 valid test runs” and that “the duration of each test
35 run must be no less than 60 minutes.” Thus, the stack tests protocols under NSPS J and
36 NSPS Ja set forth specific parameters for both the number and length of each test that
37 must be satisfied in order to conduct a valid test.

38
39 The commenter suggested replacing the phrase “burned on a 3-hour average basis” with
40 the phrase “burn-off”. UDAQ agrees with this replacement.

1 **Matt Miller**

2
3 **Comment Summary H-92: Commenter was in favor of moving the monitoring from**
4 **every 3 years to annually, and reduction in routine flaring. Also approved of switch**
5 **to year-round natural gas (assumed at Kennecott as no source reference was made)**
6 **along with approval for reduction in hazardous chemical burning (also no source**
7 **reference). Lastly, commenter was concerned about the lack of initial testing dates**
8 **for boilers (page 98) “to be alarming”, as well as why the test-date has been moved**
9 **to the third quarter (University of Utah).**

10
11 UDAQ Response to H-92: The UDAQ will focus specifically on the comments regarding
12 the University of Utah as the other comments are statements and not specific to an
13 individual source. Section IX.H.o.ii specifically lists the requirements for initial testing
14 for boilers. Boilers #4, #6, and #7 all have had initial testing completed. Boiler #9 has
15 yet to be constructed and will abide by the SIP requirement to be installed by December
16 31, 2019. An initial stack test will be performed within 180 days of initial startup for
17 Boiler #9. All future testing will be required once every three (3) years (see UDAQ
18 response to comment H-67). Testing being moved from the second to the third quarter of
19 calendar year 2019 has no consequence; it is merely allowing time for the construction of
20 the project to be completed.

1 Compass Minerals

2
3 **Comment Summary H-93: The commenter suggests that a representative useful life**
4 **be used and based upon the manufacturer specifications and specifics at the site**
5 **when analyzing BACT for determining cost effectiveness. They suggest a 20-year life**
6 **does not always reflect the usefulness of equipment in harsh environments.**
7

8 UDAQ Response to H-93: UDAQ agrees with the commenter, a 15-year life was utilizing
9 in determining the cost effectiveness of equipment at Compass Minerals, which is
10 appropriate given the harsh conditions that exist within the manufacturing process.
11
12

ITEM 7



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-091-18

M E M O R A N D U M

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Thomas Gunter, Environmental Planning Consultant

DATE: December 17, 2018

SUBJECT: FINAL ADOPTION: Change in Proposed Rule R307-110-17. Section IX, Control Measures for Area and Point Sources, Part H, Emission Limits.

On June 6, 2018, the Board proposed R307-110-17 for a 45 day public comment period. On October 3, 2018, the Board proposed the rule for an additional 30 day public comment period. No comments were received during either comment period. R307-110-17 is the rule that incorporates the new amendments to Part H into the State rules. If the Board adopts the amendments proposed to Part H, these amendments will become part of Utah's State Implementation Plan when the rule is finalized.

Recommendation: Staff recommends that the Board adopt change in proposed rule R307-110-17 as amended.

1 R307. Environmental Quality, Air Quality.

2 R307-110. General Requirements: State Implementation Plan.

3 ---

4 R307-110-17. Section IX, Control Measures for Area and Point Sources,
5 Part H, Emission Limits.

6 The Utah State Implementation Plan, Section IX, Control Measures
7 for Area and Point Sources, Part H, Emission Limits and Operating
8 Practices, as most recently amended by the Utah Air Quality Board on
9 January 2, 2019, pursuant to Section 19-2-104, is hereby incorporated
10 by reference and made a part of these rules.

11 ---

12

13 KEY: air pollution, PM10, PM2.5, ozone

14 Date of Enactment or Last Substantive Amendment: 2019

15 Notice of Continuation: January 27, 2017

16 Authorizing, and Implemented or Interpreted Law: 19-2-104

ITEM 8



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-087-18

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Director

FROM: Sheila Vance, Environmental Scientist

DATE: December 17, 2018

SUBJECT: FINAL ADOPTION: Change in Proposed Rule R307-511. Oil and Gas Industry: Associated Gas Flaring.

On September 5, 2018, the Board approved for public comment new rule R307-511. The public comment period was held from October 1 to October 31, 2018. Written comments were received by the Utah Division of Air Quality (UDAQ). In responding to the comments received from the Western Energy Alliance, UDAQ is proposing to clarify the rule's definition of "Associated Gas." The additional language in the definition provides clarity and does not alter the intent of the rule as proposed. The following provides details on the comments received and UDAQ's response.

Written comments were received from two organizations, the Environmental Defense Fund (EDF) and Western Energy Alliance (WEA).

EDF Comments - Questions and comments excerpted from original document.

EDF Comment #1: Requiring Operators to Capture, Rather than Destroy, Associated Gas Prevents Emissions Associated with Flaring and Combustion

UDAQ Response: The intent of the proposed rule was to expand the ability of oil and gas sources to take advantage of the streamlined permitting process where they follow a set of rules rather than the permit application process. Therefore, the rule is based upon current control standards for such sources, and is not intended to apply additional requirements. In current operating permits, the requirement is to either capture the associated gas or control it. To require capture rather than destruction would be an additional requirement that is currently not required for the best available control technology (BACT) applied to these sources. No changes were made as a result of this comment.

DAQ-087-18

Page 2

EDF Comment #2: Strengthening the destruction removal efficiency for flares and combustion devices will reduce air pollution caused by inefficient flares

UDAQ Response: This comment is similar to the comments received by EDF on R307-508 and the UDAQ position has not changed. The proposed rule reflects NSPS OOOOa requirements for 95% control efficiency. Combustion devices are designed to meet a 98% control efficiency but do not actually meet that percentage due to the variability in field conditions and operations. The existing rule R307-501 Oil and Gas Industry: General Provisions has requirements for proper design and operation of air pollution control equipment. No changes were made as a result of this comment.

EDF Comment #3: To help ensure that the state restores healthy air to Duchesne and Uintah counties, and to minimize the waste of natural gas and boost royalties, we urge DEQ to take the following additional steps as well:

- Initiate a stakeholder process in conjunction with the Division of Oil, Gas and Mining (DOGM) to evaluate proven measures to concurrently reduce flaring and waste pursuant to the Oil and Gas Conservation Act's prohibition on waste.
- Initiate a stakeholder process to evaluate the potential for additional emissions reductions, including a robust alternative pathway in R307-509 that allows operators to use emerging leak detection methods such as continuous methane monitors, to comply with leak detection and repair requirement, and adding requirements that limit venting from pipelines, well maintenance activities, and pneumatic pumps.

DAQ Response: Thank you for these suggestions. UDAQ will continue to use the stakeholder process, as we have in the past, when the need for any future rulemaking arises.

Western Energy Alliance (WEA) Comments - Questions and comments excerpted from original document.

WEA Comment #1: While we understand the need to limit the time frame of the associated gas releases, our experience shows that there are unanticipated events outside the operator's control that may extend longer than 24 hours. Specifically, there are times when gas compressor stations have had a mechanical or maintenance shutdowns that lasts as long as three days. During these shutdowns, the gas from the well is routed to a flare when available, or vented through tank or separator pressure relief devices. Would this rule apply to the above situation considering the definition of "Associated Gas" specifically excludes "All gas from storage vessels and low pressure separators?"

UDAQ Response: In response to the example provided in WEA's comment, UDAQ would not agree that mechanical and maintenance shutdowns by downstream compressor stations would meet the definition of an emergency. UDAQ defines an "Emergency" as a "temporary, infrequent and unavoidable situation" and is "an unanticipated event or failure." It is our understanding that compressor stations are known to have several day shutdowns quite often. We view these shutdowns as part of the standard operating processes that are known to operators of well sites. Thus, as part of well site operations, a stationary or portable flare must be available for situations that disrupt the sales line. Therefore, we do not consider such situations as emergencies.

WEA also provided the example that during such events when a downstream compressor station is down due to maintenance or mechanical issues, gas may be routed to tank or separator pressure relief devices. The current proposed rule definition of "associated gas" excludes gas from storage vessels and low pressure separators. The proposed definition included the exclusion since R307-506 and R307-507 already apply to these emissions sources. These rules are based upon normal operations, meaning working,

DAQ-087-18

Page 3

breathing and flashing from day to day operations associated with tanks and separators. These are not designed to take the full output of the gas well product. Therefore, UDAQ will clarify the exclusion from the associated gas definition by amending R307-511-2 as follows:

“Associated Gas” means the natural gas that is produced from an oil well during [normal] production operations and is either sold, re-injected, used for production purposes, vented (rarely) or flared. ~~[All gas from storage vessels and low pressure separators is not associated gas]~~ Low pressure gas associated with the working, breathing, and flashing of oil is not considered associated gas under this definition and shall be controlled in accordance with R307-506 and R307-507.

Also, in providing clarification to the exclusion to the associated gas definition, UDEQ determined that a clarification was needed for R307-511-4 Associated Gas Flaring Requirements and editorial changes. The UDEQ would like to clarify the purpose of routing gas to a process unit. The following change is proposed for R307-5011-4:

(1) Associated gas from a completed well shall either be routed to a process unit for combustion, routed to a sales pipeline, or routed to an operating VOC control device except for ~~[the following condition:~~
~~(a) Under]~~emergency release situations as defined in R307-511-2.

Recommendation: Staff recommends that the Board adopt change in proposed rule R307-511 as amended.

1 **Appendix 1: Regulatory Impact Summary Table***

Fiscal Costs	FY 2019	FY 2020	FY 2021
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

2 *This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they
3 will not be included in this table. Inestimable impacts for State Government, Local Government, Small
4 Businesses and Other Persons are described above. Inestimable impacts for Non-Small Businesses are described
5 below.

7 **Appendix 2: Regulatory Impact to Non-Small Businesses**

8 No non-small businesses are expected to be impacted by this
9 rulemaking. Large industrial businesses are already required to
10 maintain and utilize the controls that this rule would require.
11 This rule will primarily apply to smaller oil and gas operations
12 that are susceptible to releases of produced gas. Therefore,
13 non-small businesses will not be impacted.

14 There are an inestimable amount of oil and gas extraction
15 (extraction) small businesses (NAICS 2111) operating in Utah.
16 These extraction sites can be included in the Utah oil and gas
17 registration, but their total numbers are currently unknown.
18 These businesses could experience a one-time fiscal cost of
19 \$800-\$1,500 associated with purchasing and installing the
20 required control devices. The full impact to these small
21 businesses cannot be estimated because the lack of extraction
22 site inventory and control equipment already installed at those
23 sites is not available.

24 Regardless of the fiscal impact possible on these small
25 extraction sites, there is also a possibility for these same
26 sites to experience a one-time benefit associated with the

1 installation of the control devices. Sites identified as needing
2 to flare releases are likely required to be permitted. With the
3 recently passed rule that allows permitting by rule, these small
4 extraction sites will be eligible for the one-time permitting
5 cost of \$250 if they have the controls installed, as opposed to
6 the original one-time cost of \$2,300 to obtain a permit. That
7 equals a potential benefit of \$2,050. The amount saved through
8 the use of this rule is greater than the amount required to
9 purchase and install the controls.

10 The Executive Director of the Department of Environmental
11 Quality, Alan Matheson, has reviewed and approved this fiscal
12 analysis.

13
14 **R307. Environmental Quality, Air Quality.**

15 **R307-511. Oil and Gas Industry: Associated Gas Flaring.**

16 **R307-511-1. Purpose.**

17 R307-511 establishes control requirements for the flaring
18 of produced gas associated with well sites.

19
20 **R307-511-2. Definitions.**

21 "Emergency release" means a temporary, infrequent and
22 unavoidable situation in which the loss of gas is uncontrollable
23 or necessary to avoid risk of an immediate and substantial
24 adverse impact on safety, public health, or the environment. An
25 "emergency" is limited to a short-term situation of 24 hours or
26 less caused by an unanticipated event or failure that is out of
27 the operator's control and is not due to operator negligence.

28 "Flaring" means use of a thermal oxidation system designed
29 to combust hydrocarbons in the presence of a flame.

30 "Associated Gas" means the natural gas that is produced
31 from an oil well during ~~[normal]~~ production operations and is
32 either sold, re-injected, used for production purposes, vented
33 (rarely) or flared. ~~[All gas from storage vessels and low~~
34 ~~pressure separators is not associated gas]~~ Low pressure gas
35 associated with the working, breathing, and flashing of oil is
36 not considered associated gas under this definition and shall be
37 controlled in accordance with R307-506 and R307-507.

38
39 **R307-511-3. Applicability.**

40 (1) R307-511 applies to each producing well located at a well
41 site as defined in 40 CFR 60.5430a Subpart 0000a Standards of
42 Performance for Crude Oil and Natural Gas Production,
43 Transmission and Distribution.

44 (2) VOC control devices used for controlling associated gas are
45 subject to R307-508.

46 (3) R307-511 does not apply to producing wells that are subject
47 to an approval order issued under R307-401-8.

1
2 **R307-511-4. Associated Gas Flaring Requirements.**

3 (1) Associated gas from a completed well shall either be routed
4 to a process unit for combustion, routed to a sales pipeline, or
5 routed to an operating VOC control device except for [the
6 ~~following condition:~~

7 ~~(a) Under]~~emergency release situations as defined in R307-511-
8 2.

9
10 **R307-511-5. Recordkeeping.**

11 (1) The owner or operator shall maintain records for releases
12 under R307-511-4(1)(a).

13 (a) The time and date of event, volume of emissions and any
14 corrective action taken shall be recorded.

15 (b) These records shall be kept for a minimum of three years.

16
17 **KEY: air quality, nonattainment, offset**

18 **Date of Enactment or Last Substantive Amendment: 201[8]9**

19 **Authorizing, and Implemented or Interpreted Law: 19-2-104; 19-2-**
20 **108**

ITEM 9

Air Toxics



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQA-1027-18

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: November 5, 2018

SUBJECT: Air Toxics, Lead-Based Paint, and Asbestos (ATLAS) Section Compliance Activities – October 2018

Asbestos Demolition/Renovation NESHAP Inspections	8
Asbestos AHERA Inspections	54
Asbestos State Rules Only Inspections	2
Asbestos Notification Forms Accepted	211
Asbestos Telephone Calls	457
Asbestos Individuals Certifications Approved/Disapproved	72/0
Asbestos Company Certifications/Re-Certifications	4/2
Asbestos Alternate Work Practices Approved/Disapproved	6/0
Lead-Based Paint (LBP) Inspections	7
LBP Notification Forms Accepted	0
LBP Telephone Calls	72
LBP Letters Prepared and Mailed	10
LBP Courses Reviewed/Approved	0/0
LBP Course Audits	0
LBP Individual Certifications Approved/Disapproved	20/0
LBP Firm Certifications Approved/Disapproved	12/0

DAQA-1027-18

Page 2

Notices of Violation Sent	0
Compliance Advisories Sent	23
Warning Letters Sent	13
Settlement Agreements Finalized	7
Penalties Agreed to:	
Salt Lake County Housing and Community Development	\$ 3,750.00
Preservation Painting, Inc.	\$ 1,500.00
Michael Moyal	\$ 3,000.00
Andrew O'Farrell	\$ 2,125.00
Dave Orgill	\$ 3,000.00
Bliss Parsons	\$ 1,959.38
BTS, Inc.	<u>\$ 1,200.00</u>
Total	\$16,534.38



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQA-1149-18

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: December 17, 2018

SUBJECT: Air Toxics, Lead-Based Paint, and Asbestos (ATLAS) Section Compliance Activities – November 2018

Asbestos Demolition/Renovation NESHAP Inspections	19
Asbestos AHERA Inspections	20
Asbestos State Rules Only Inspections	6
Asbestos Notification Forms Accepted	123
Asbestos Telephone Calls	384
Asbestos Individuals Certifications Approved/Disapproved	53/0
Asbestos Company Certifications/Re-Certifications	3/9
Asbestos Alternate Work Practices Approved/Disapproved	15/0
Lead-Based Paint (LBP) Inspections	4
LBP Notification Forms Approved	1
LBP Telephone Calls	26
LBP Letters Prepared and Mailed	9
LBP Courses Reviewed/Approved	0/0
LBP Course Audits	2
LBP Individual Certifications Approved/Disapproved	6/0
LBP Firm Certifications	9

DAQA-1149-18

Page 2

Notices of Violation Sent	0
Compliance Advisories Sent	18
Warning Letters Sent	11
Settlement Agreements Finalized	3
Penalties Agreed to:	
AbateX Environmental Services, Inc.	\$ 375.00
DRL Enterprises, Inc.	\$ 328.79
Driggs Development, LLC	<u>\$ 225.00</u>
 Total	 \$ 928.79

Compliance



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-2387-18

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: November 15, 2018

SUBJECT: Compliance Activities – October 2018

Annual Inspections Conducted:

Major.....	4
Synthetic Minor	0
Minor	33

On-Site Stack Test Audits Conducted: 2

Stack Test Report Reviews: 40

On-Site CEM Audits Conducted: 0

Emission Reports Reviewed: 2

Temporary Relocation Requests Reviewed & Approved: 8

Fugitive Dust Control Plans Reviewed & Accepted: 147

Open Burn Permit Applications Completed 1,562

Soil Remediation Report Reviews: 5

¹Miscellaneous Inspections Conducted: 23

Complaints Received: 12

DAQC-2387-18

Page 2

Breakdown Reports Received:.....	0
Compliance Actions Resulting From a Breakdown.....	0
Warning Letters Issued:	2
Notices of Violation Issued:.....	0
Compliance Advisories Issued:.....	3
No Further Action Letters Issued.....	6
Settlement Agreements Reached:	5
R. Chapman Construction – Harmston Plant.....	\$37,667.00
Kilgore Companies – Parley’s Aggregate Pit	\$1,414.00
Dematic.....	\$359.00
Newfield Production.....	\$359.00
R. Chapman Construction – Lake Fork Pit.....	\$471.00

¹Miscellaneous inspections include, e.g., surveillance, level I inspections, VOC inspections, complaints, on-site training, dust patrol, smoke patrol, open burning, etc.



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-2486-18

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: December 10, 2018

SUBJECT: Compliance Activities – November 2018

Annual Inspections Conducted:

Major.....	4
Synthetic Minor	3
Minor	41
On-Site Stack Test Audits Conducted:	3
Stack Test Report Reviews:	40
On-Site CEM Audits Conducted:	0
Emission Reports Reviewed:	6
Temporary Relocation Requests Reviewed & Approved:	6
Fugitive Dust Control Plans Reviewed & Accepted:	150
Open Burn Permit Applications Completed	263
Soil Remediation Report Reviews:	4
¹ Miscellaneous Inspections Conducted:	23
Complaints Received:	15

DAQC-2486-18

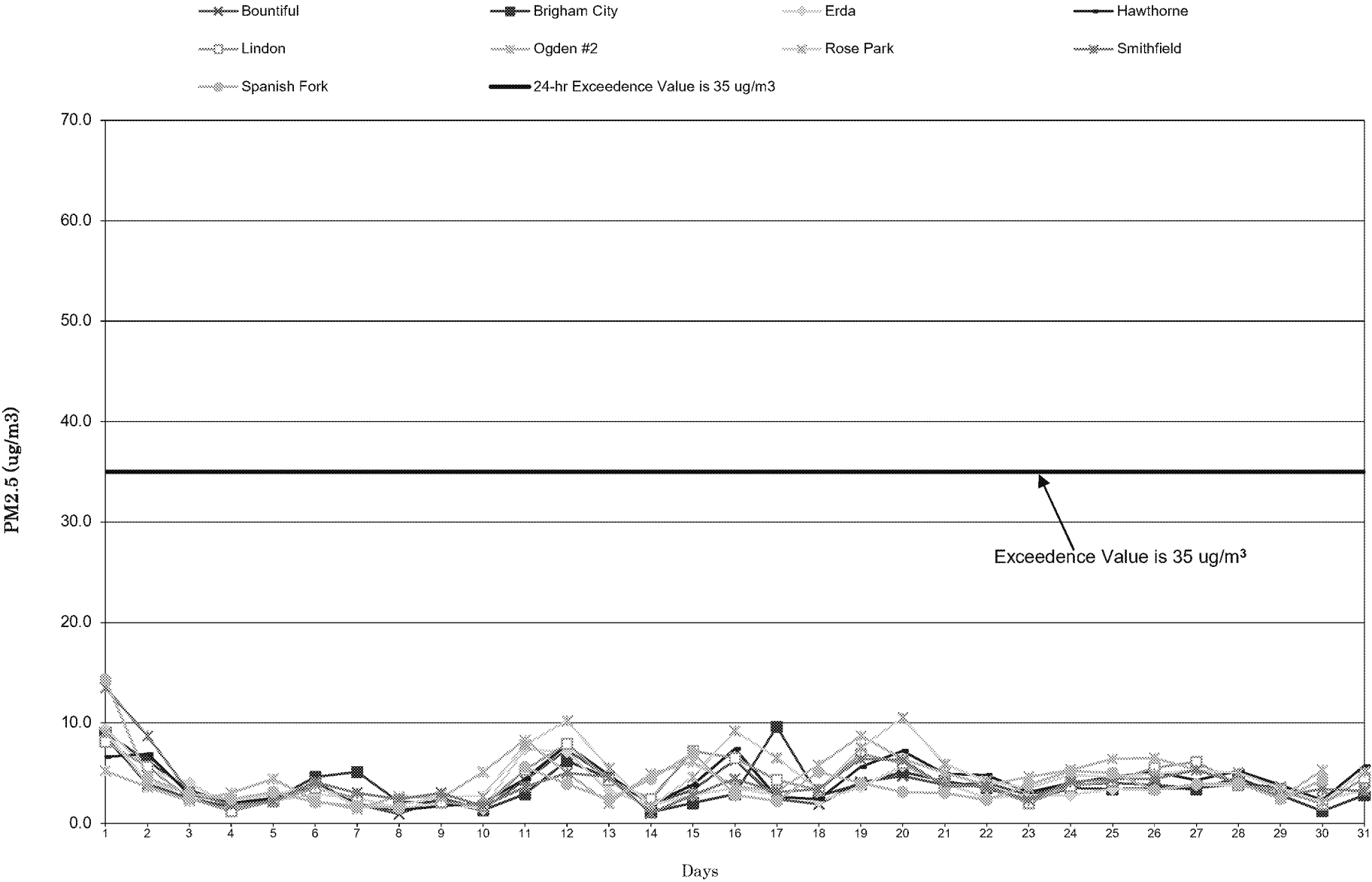
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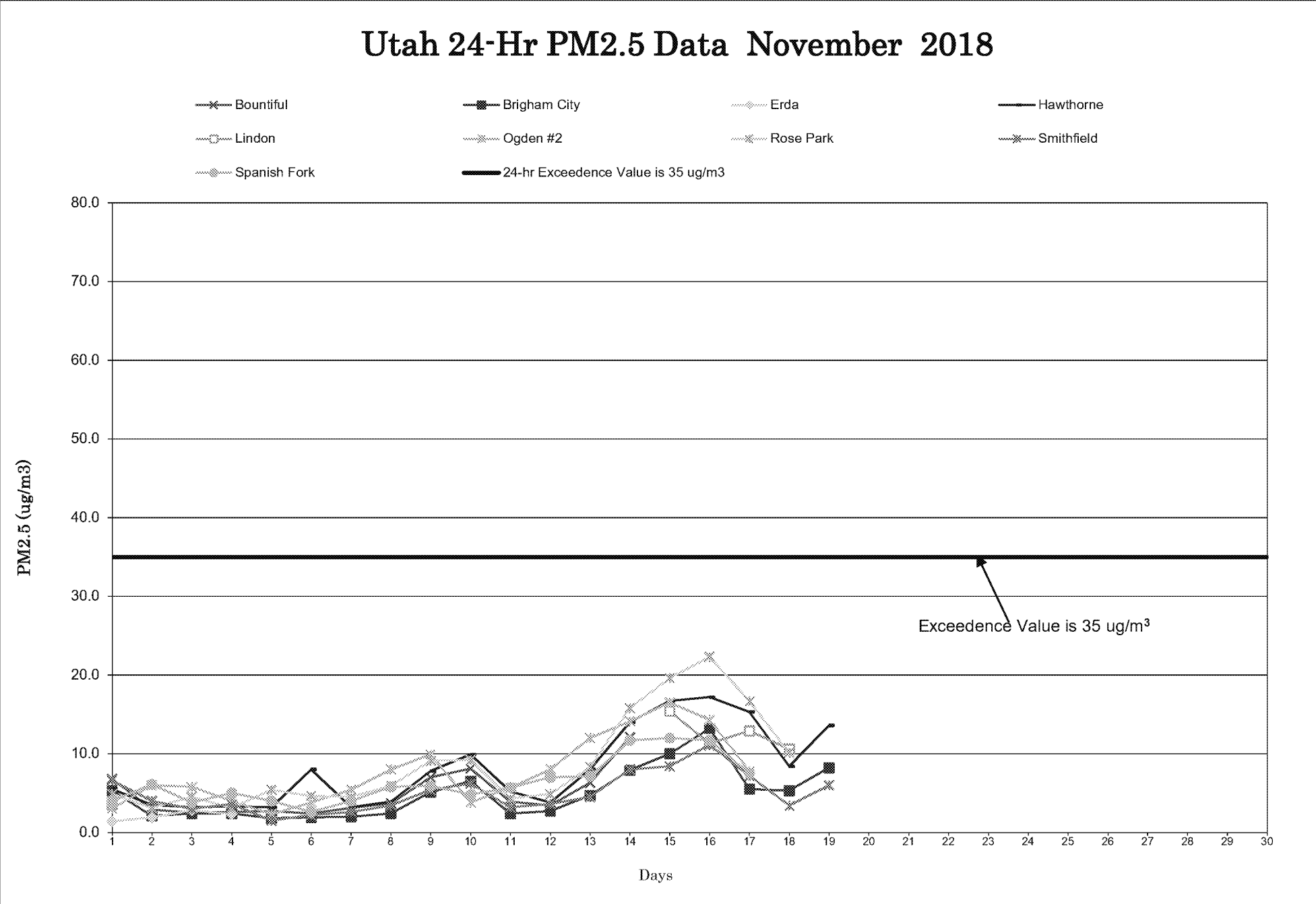
Breakdown Reports Received:.....	0
Compliance Actions Resulting From a Breakdown.....	0
Warning Letters Issued:	3
Notices of Violation Issued:.....	0
Compliance Advisories Issued:.....	5
No Further Action Letters Issued.....	4
Settlement Agreements Reached:	3
Crescent Point Energy	\$583.00
Wesco Operating	\$710.00
Action Target	\$729.00

¹Miscellaneous inspections include, e.g., surveillance, level I inspections, VOC inspections, complaints, on-site training, dust patrol, smoke patrol, open burning, etc.

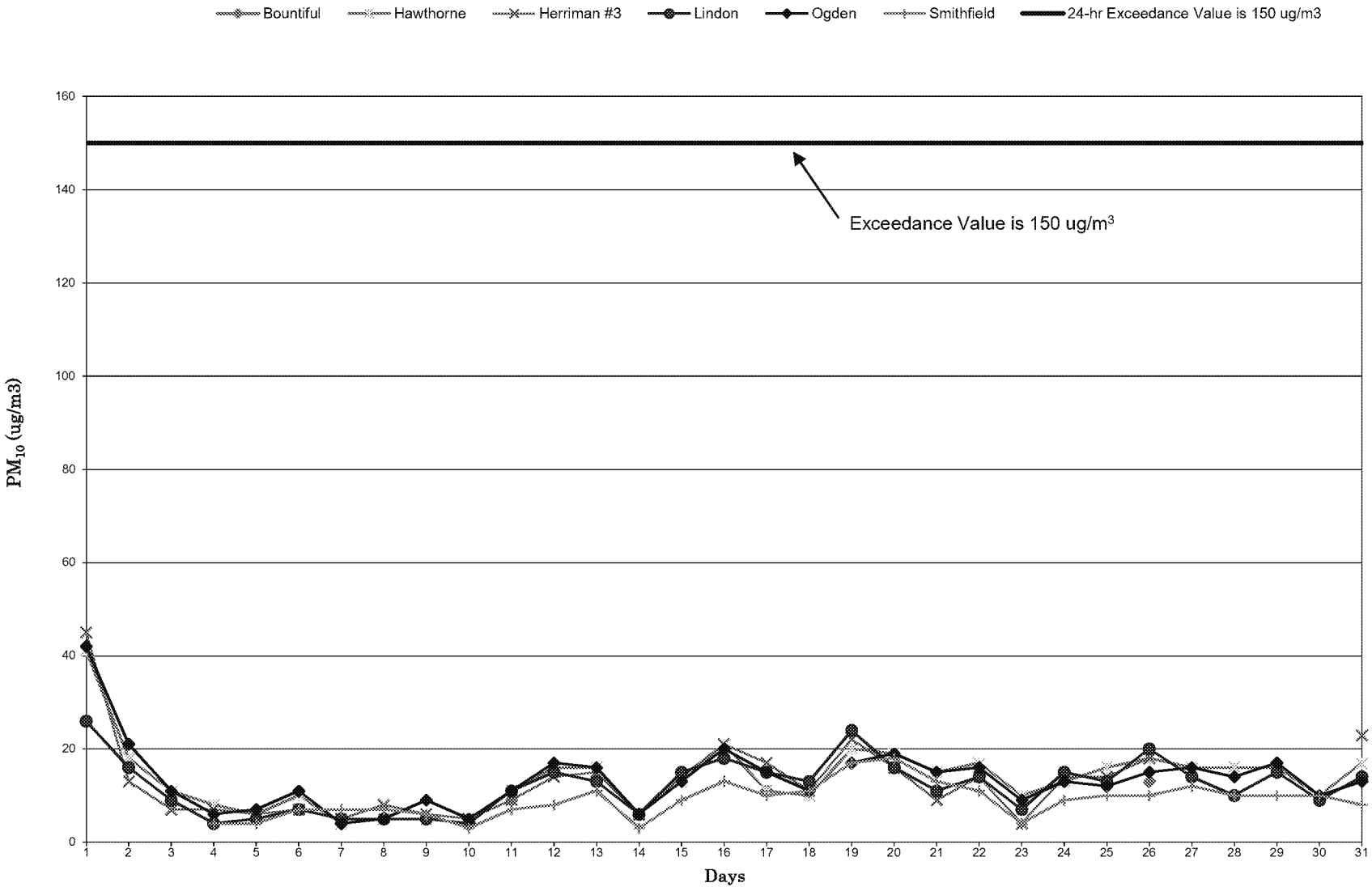
Air Monitoring

Utah 24-Hr PM2.5 Data October 2018

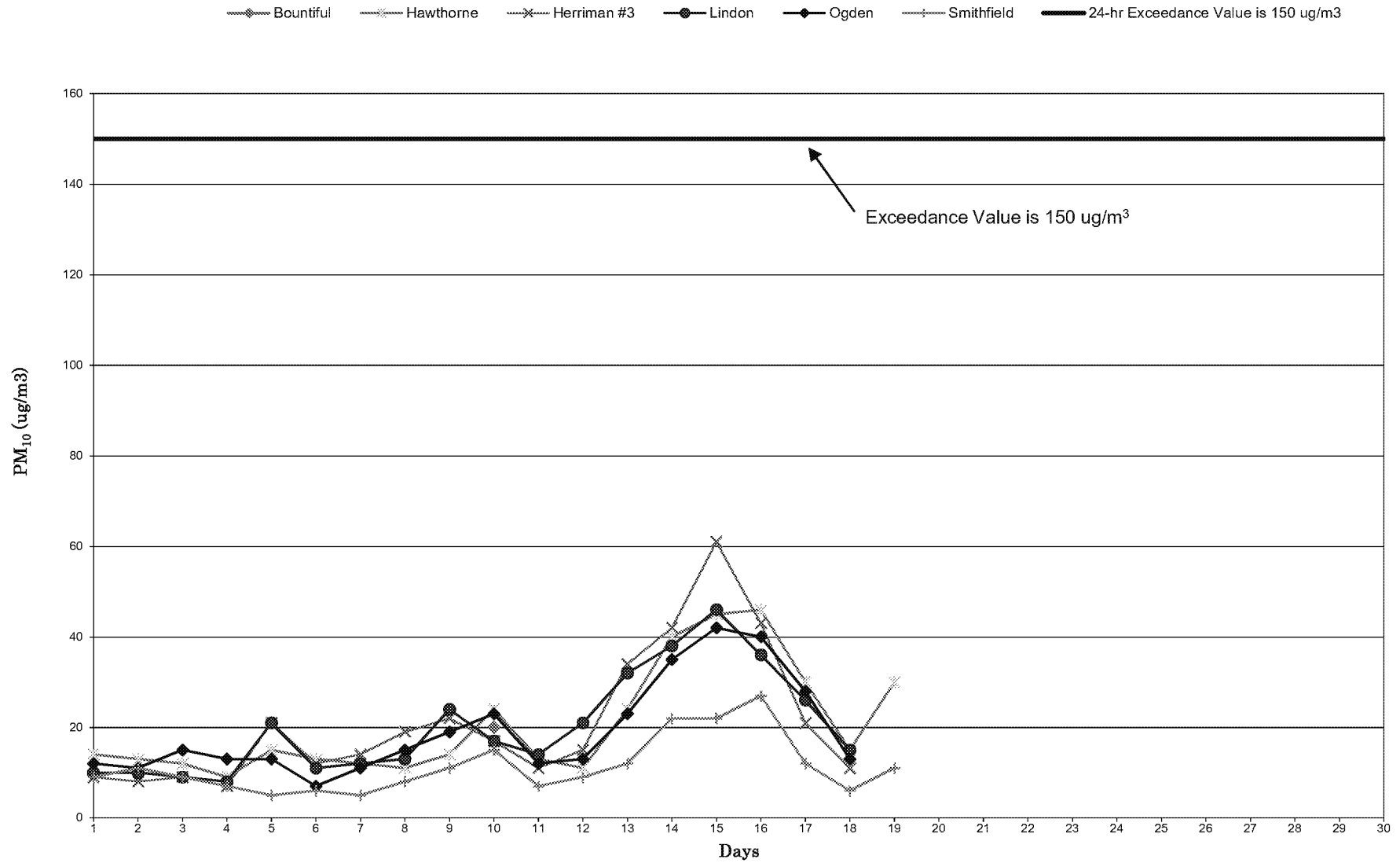




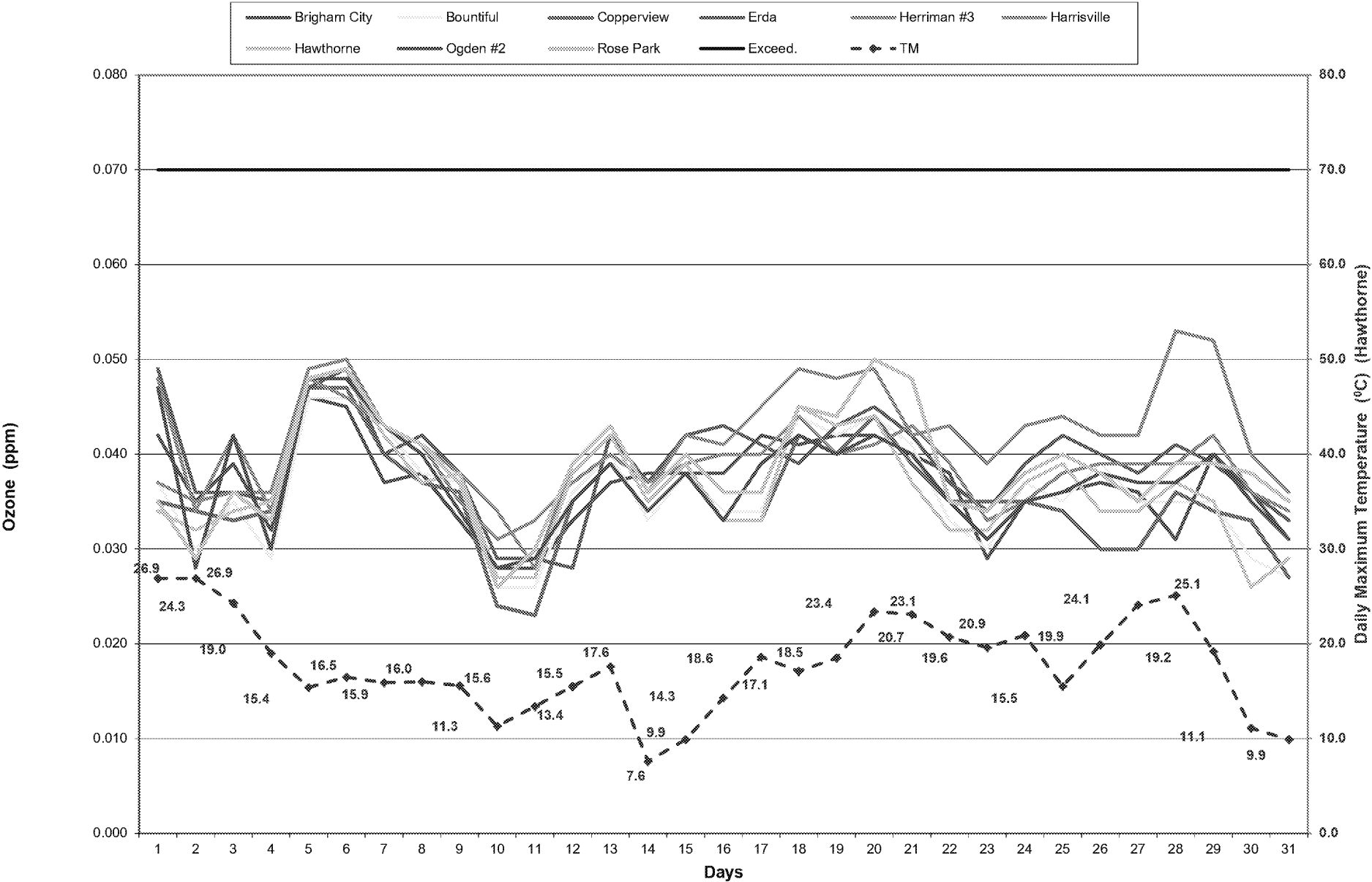
Utah 24-hr PM₁₀ Data October 2018



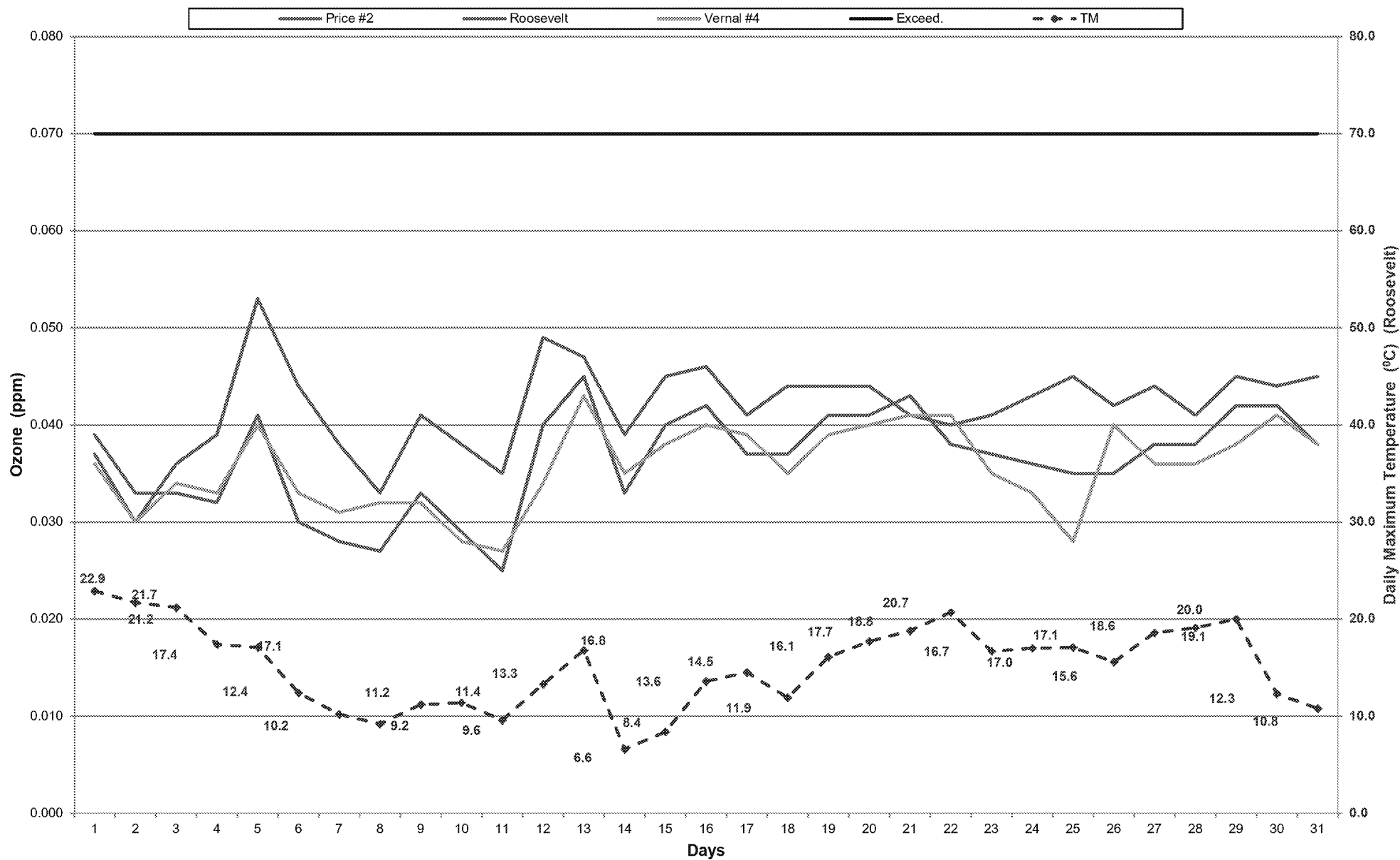
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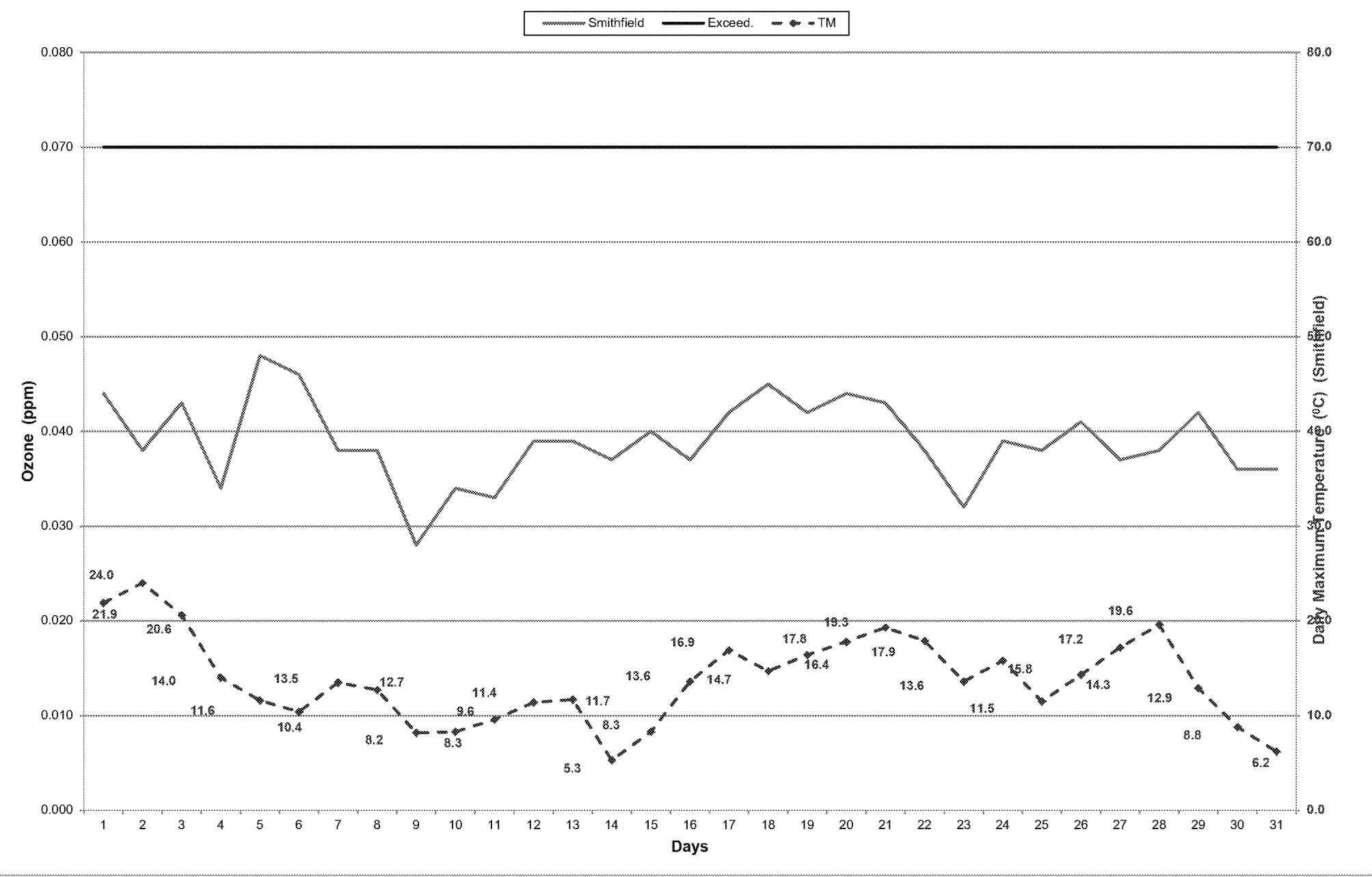
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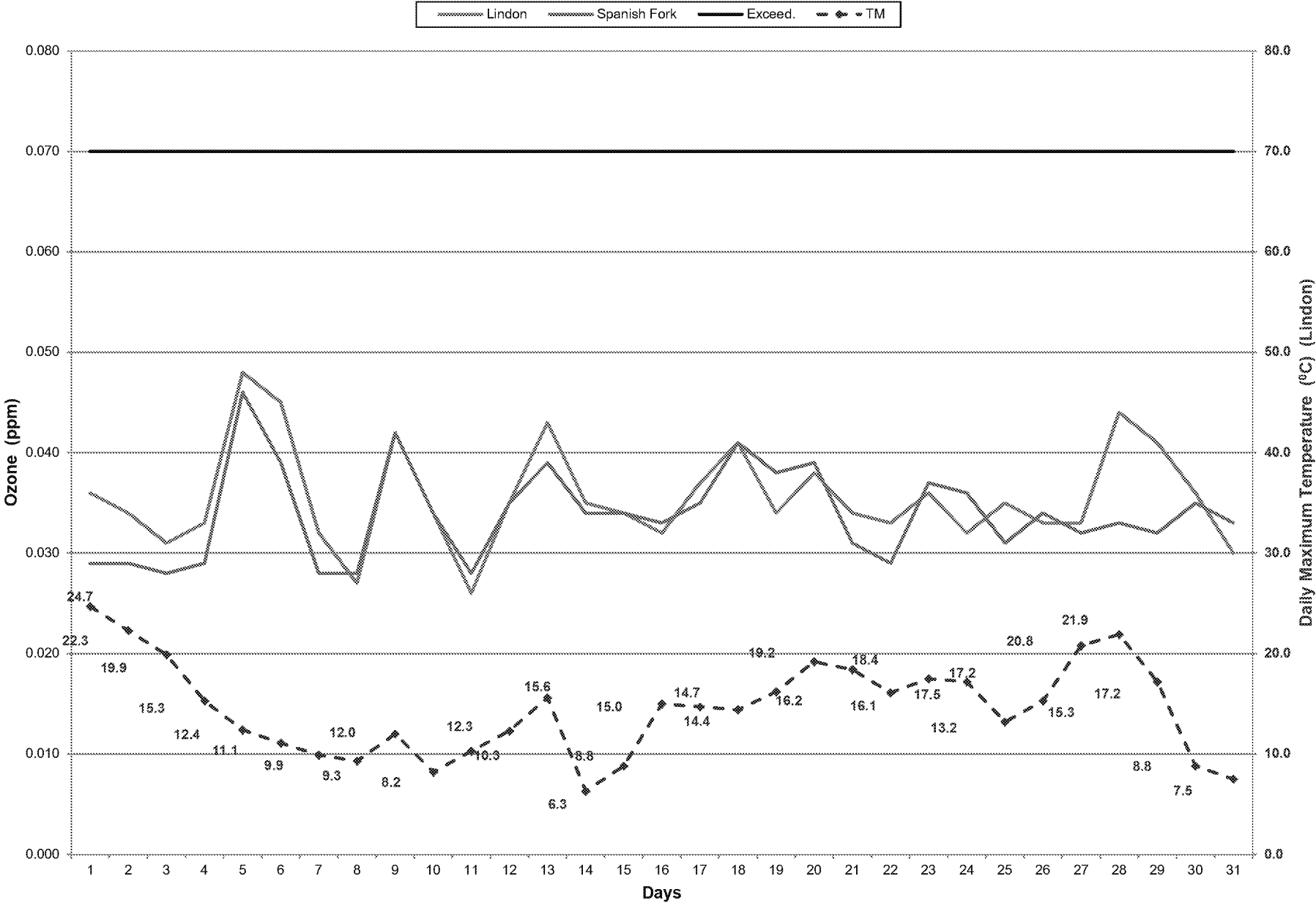
Highest 8-hr Ozone Concentration & Daily Maximum Temperature October 2018



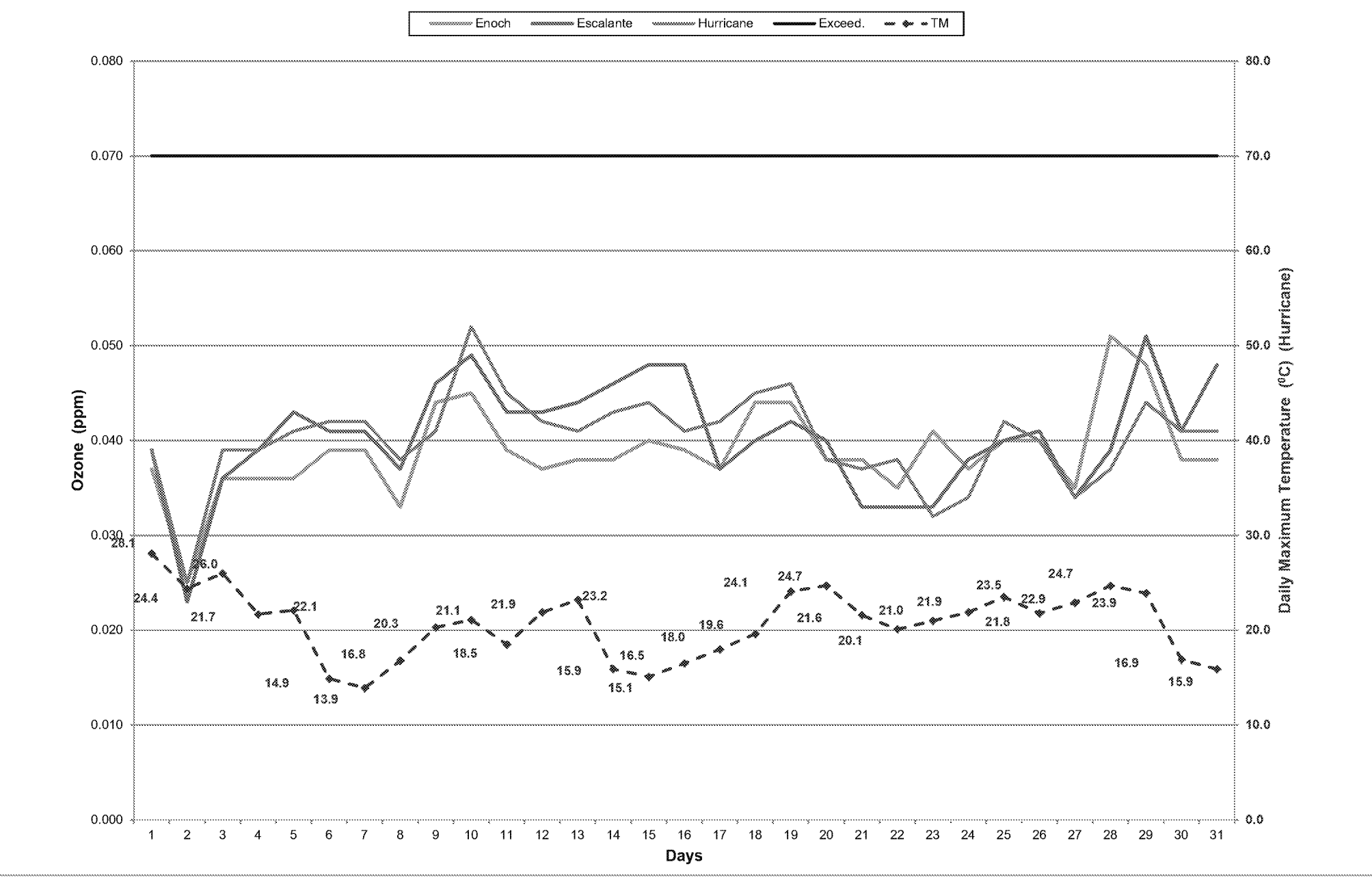
Highest 8-hr Ozone Concentration & Daily Maximum Temperature October 2018



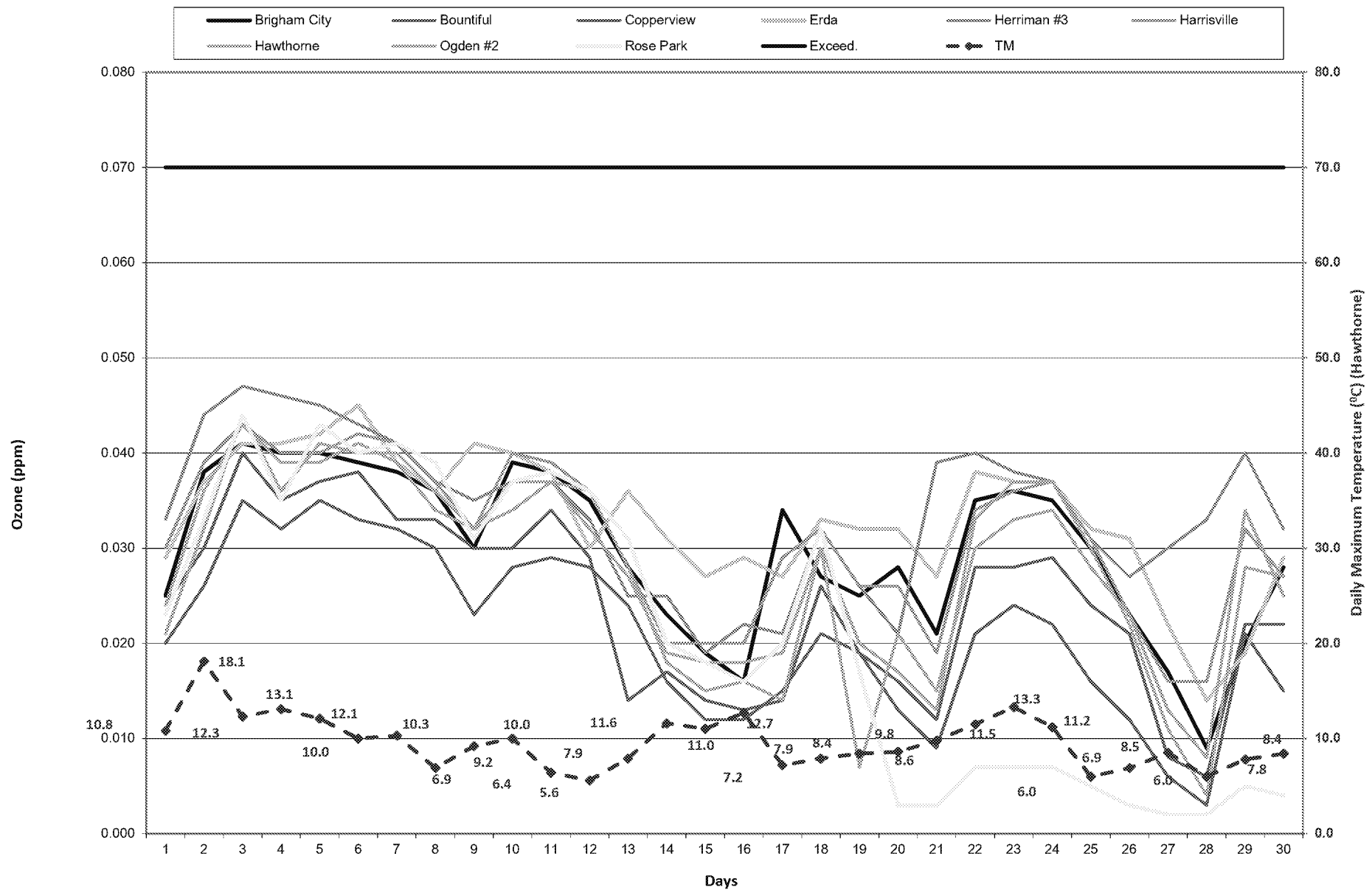
Highest 8-hr Ozone Concentration & Daily Maximum Temperature October 2018



Highest 8-hr Ozone Concentration & Daily Maximum Temperature October 2018

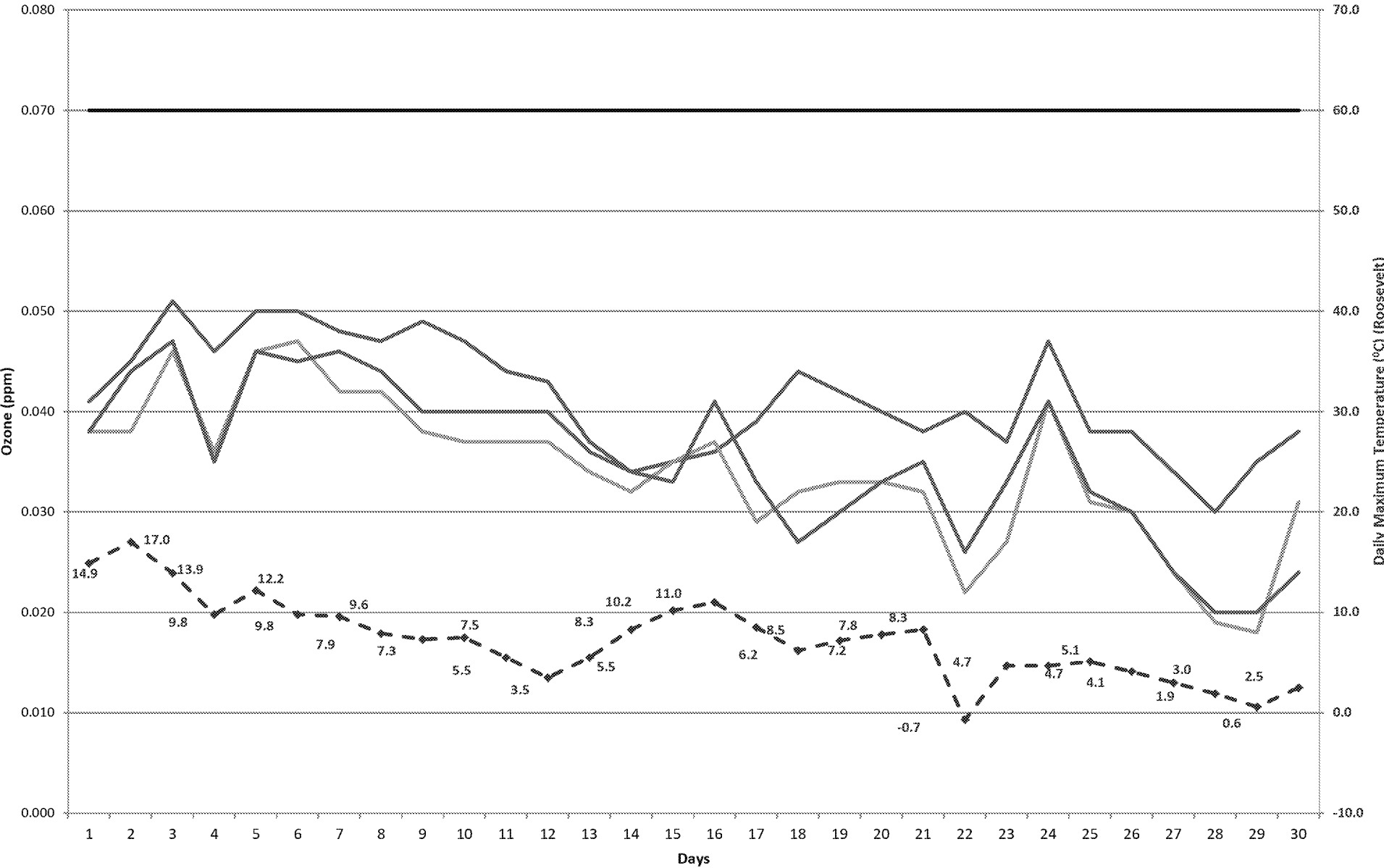


Highest 8-hr Ozone Concentration & Daily Maximum Temperature November 2018

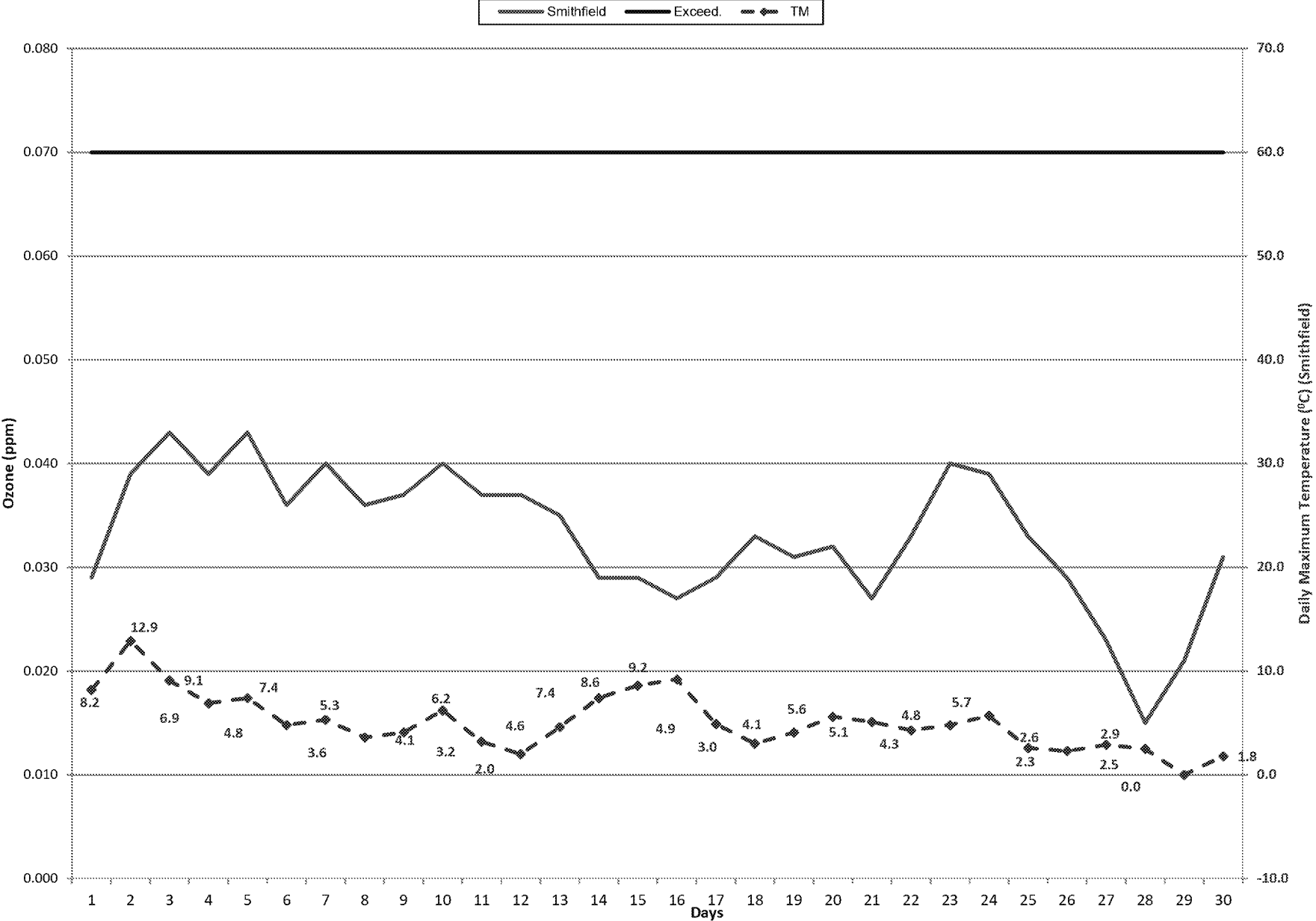


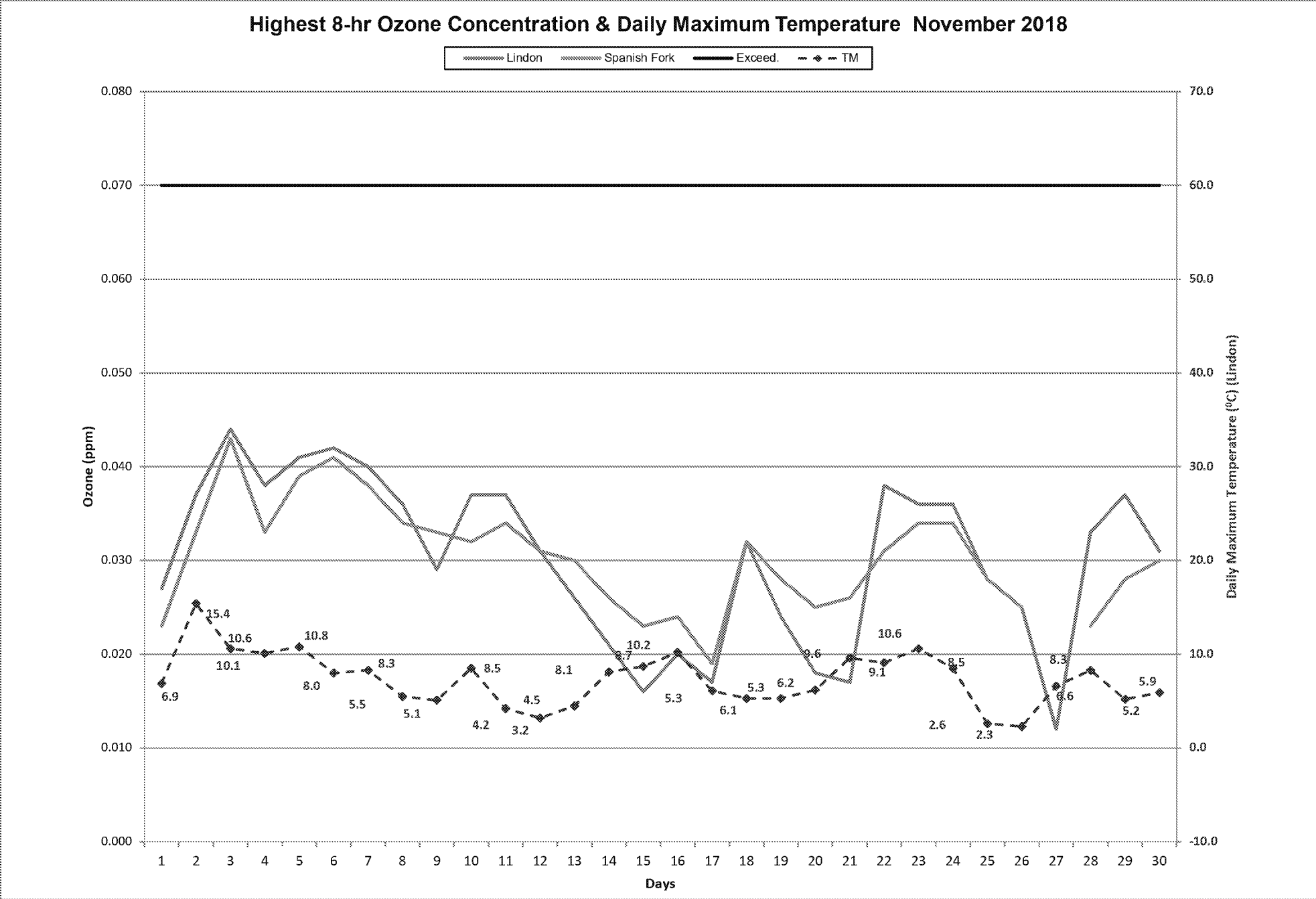
Highest 8-hr Ozone Concentration & Daily Maximum Temperature November 2018

Price #2 Roosevelt Vernal #4 Exceed. TM

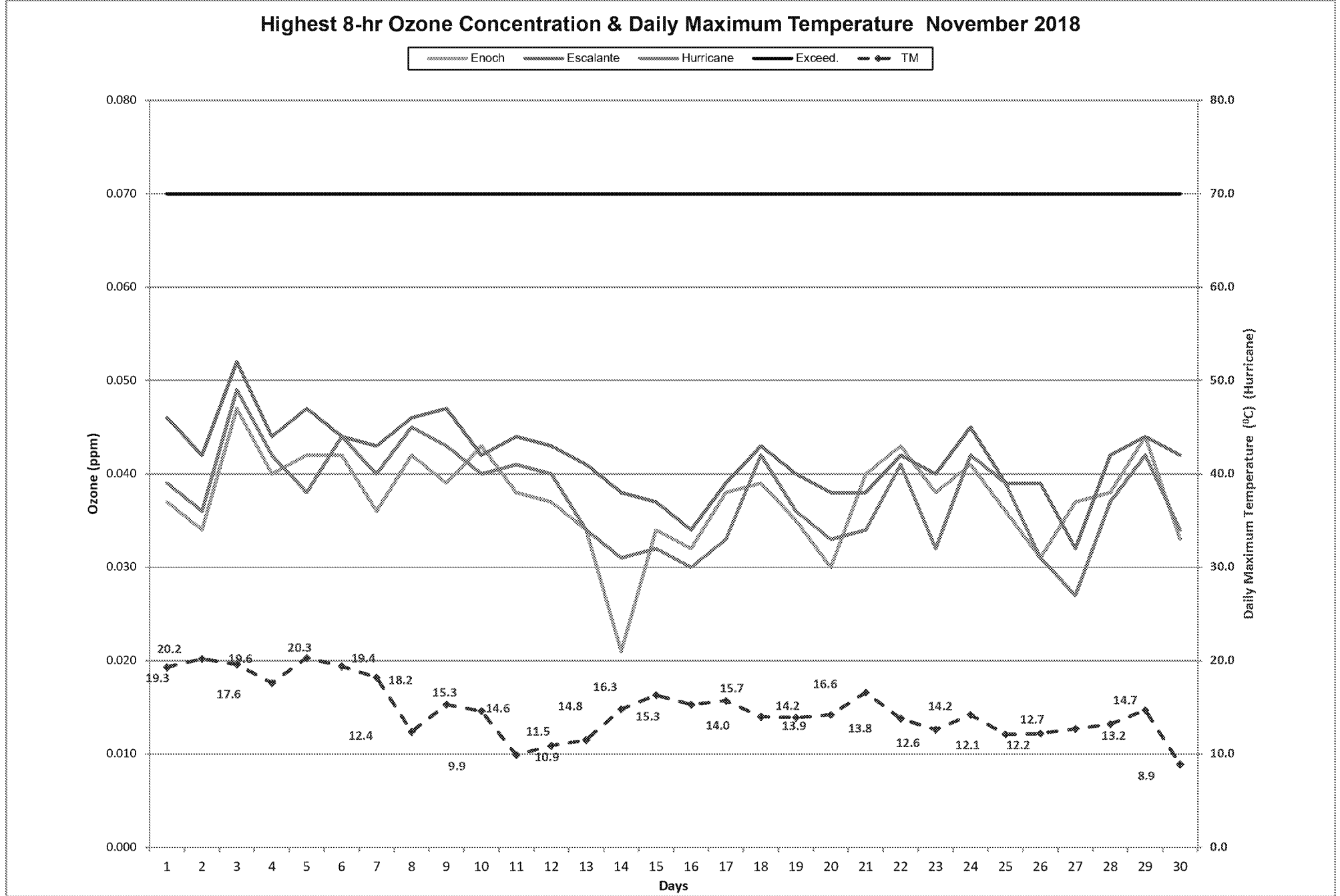


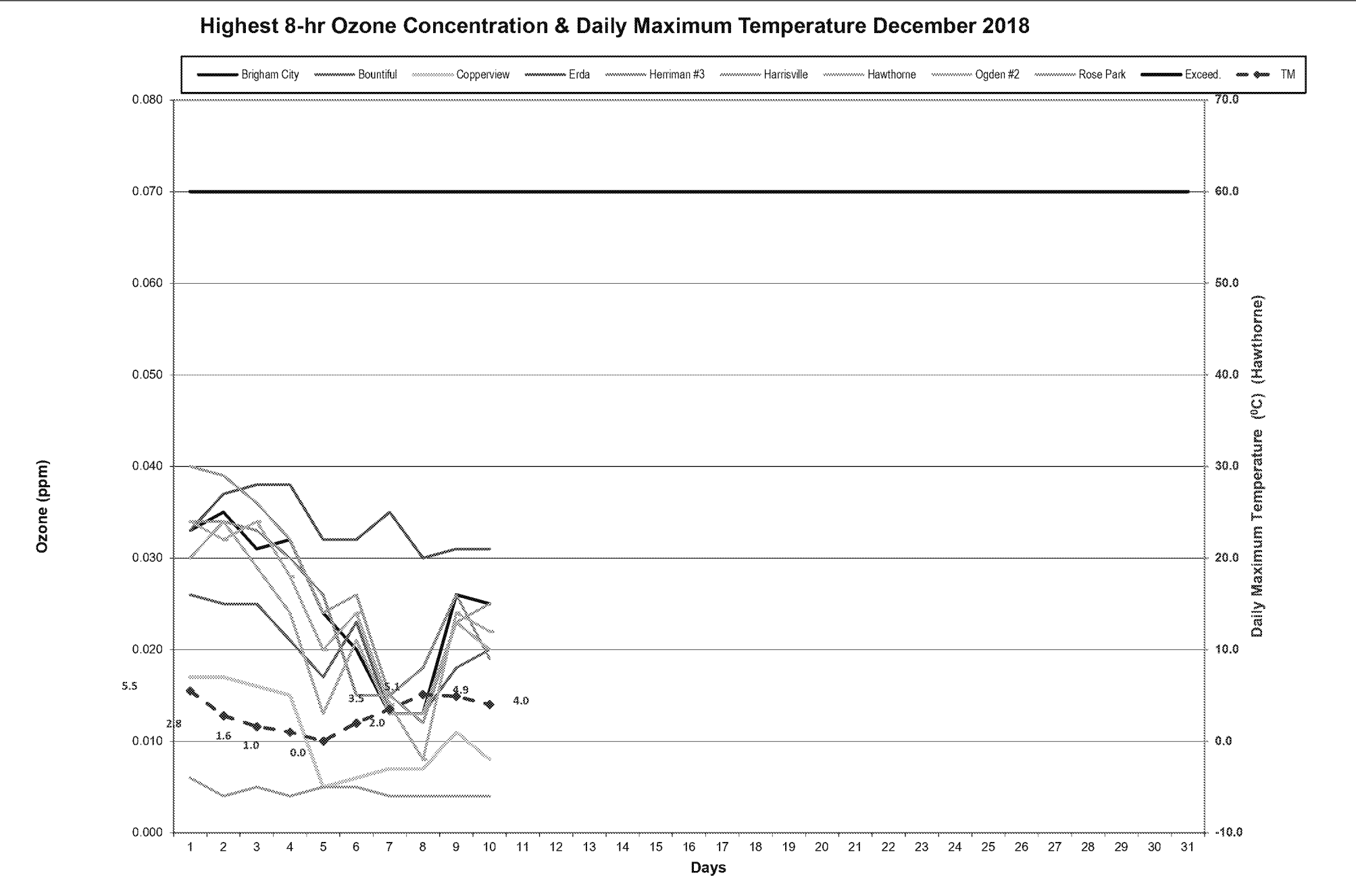
Highest 8-hr Ozone Concentration & Daily Maximum Temperature November 2018



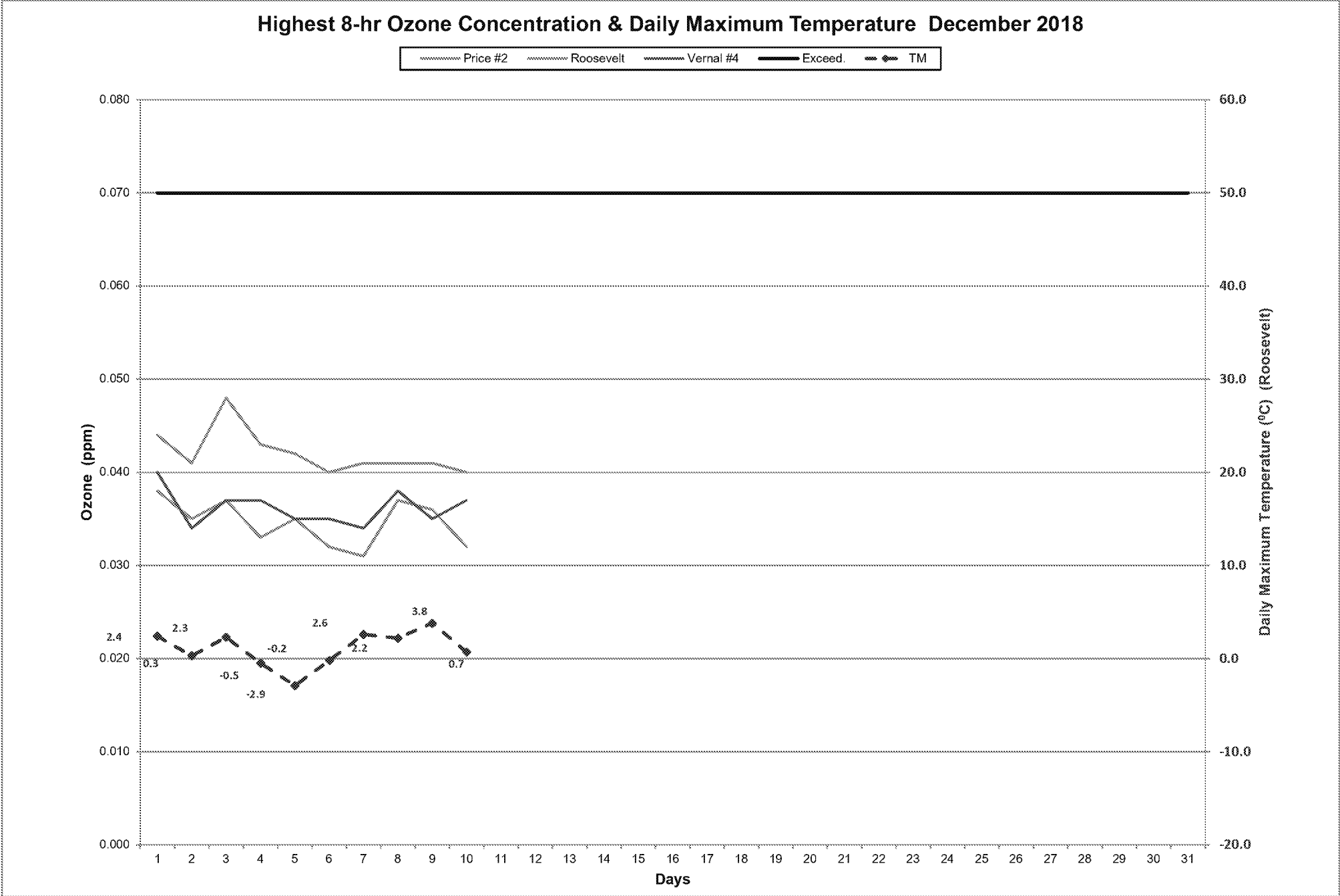


Highest 8-hr Ozone Concentration & Daily Maximum Temperature November 2018

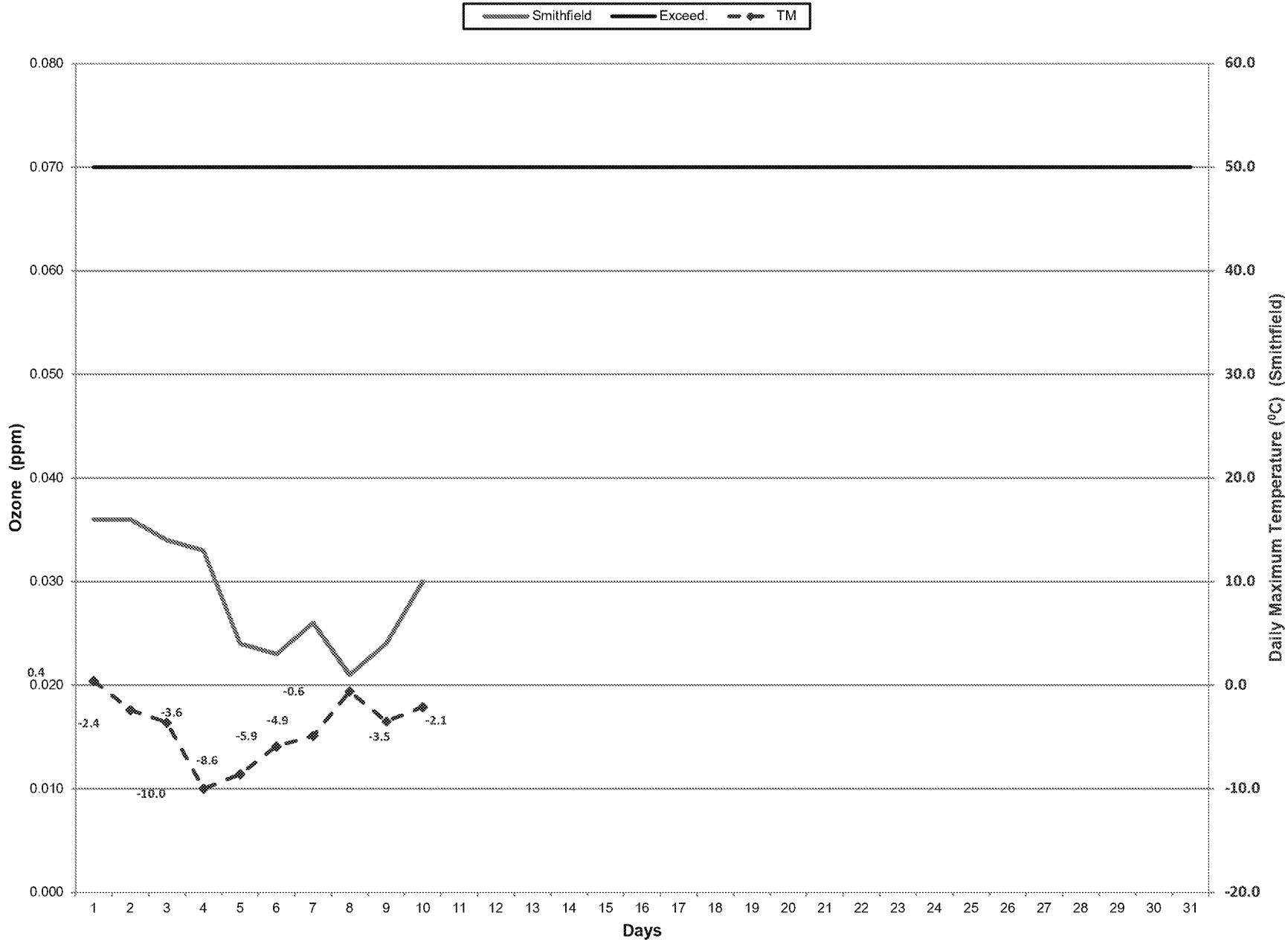




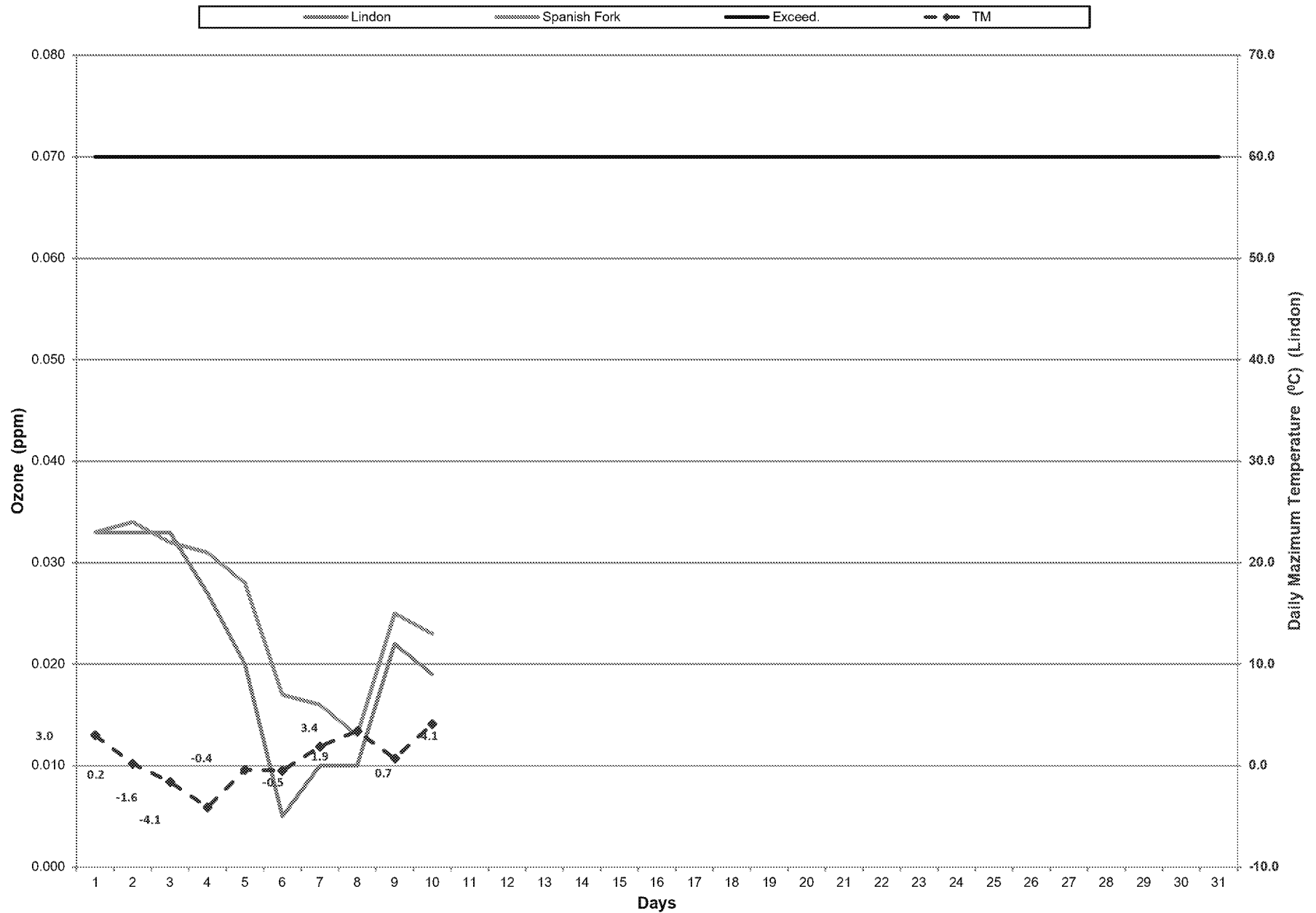
Highest 8-hr Ozone Concentration & Daily Maximum Temperature December 2018



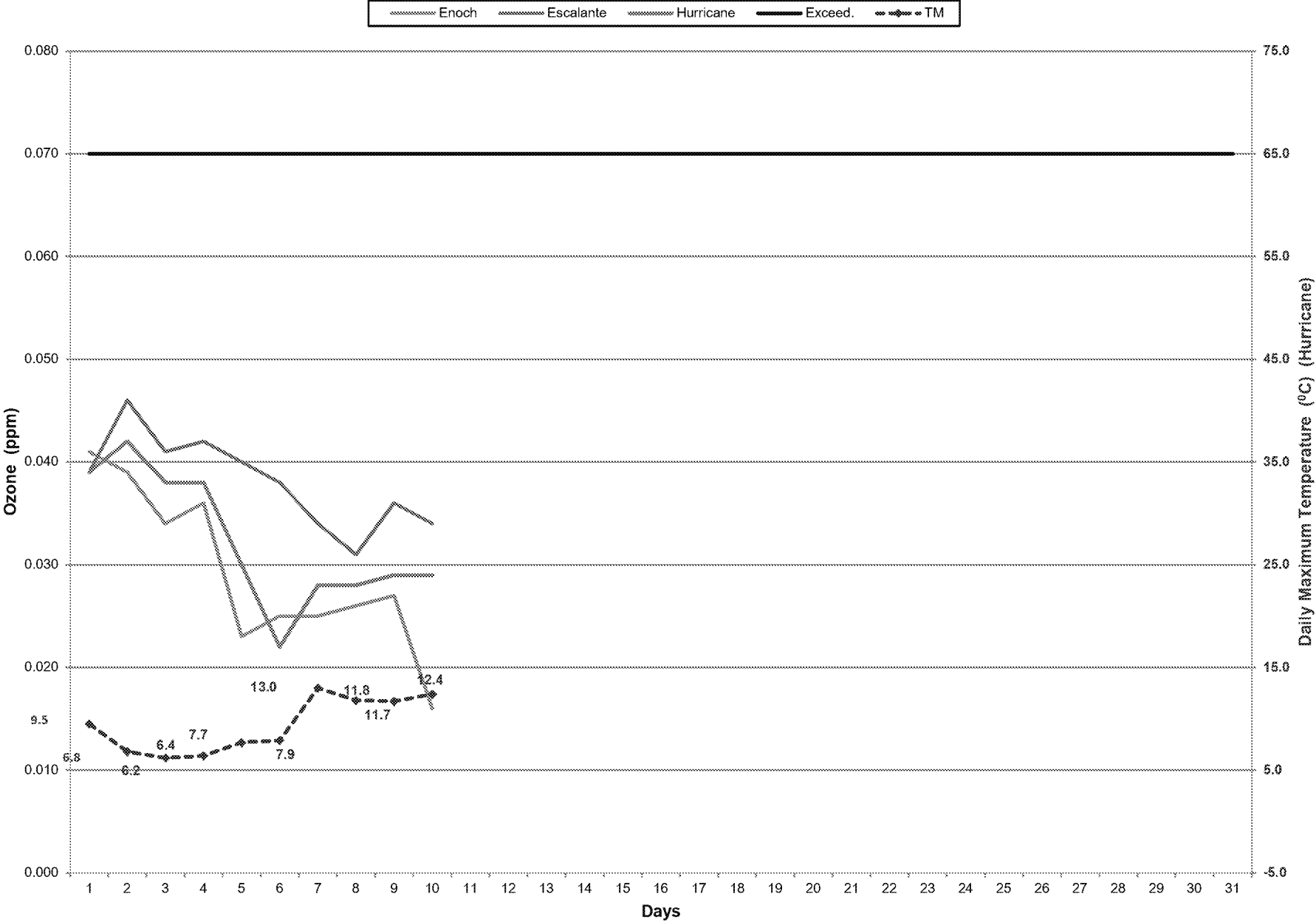
Highest 8-hr Ozone Concentration & Daily Maximum Temperature December 2018



Highest 8-hr Ozone Concentration & Daily Maximum Temperature December 2018



Highest 8-hr Ozone Concentration & Daily Maximum Temperature December 2018



Compare CMAQ Projects

Type of Improvement		Cost	Effective Days	Project Life	VHT Reduced
	School Bus Retrofit (2008)*	\$ 753,300	175	10.1	0
	UTA Locomotive Retrofit**	\$1,172,833	304	10	1.2
	Vanpool Expansion	\$ 118,800	231	5	1.2
VW	VW-Light Duty EV Equip.	\$ 570,000	Mobile	1	
	Carpool Management	\$ 30,000	250	1	1.2
	Ogden Signal Connect	\$ 489,458	276	5	284.1
	Bike Sharing	\$ 600,000	365	10	1.2
DERA	DERA-Replace SH Class 5-7	1,275	Mobile	3	
	Intersection - Operations	\$1,638,797	302	20	217.6
	Round-A-Bout	\$ 673,470	302	20	85.2
DERA	DERA-Replace Const. Tier1	900	Non-road	3	
	Signal Performance Measures	\$ 800,000	312	5	249.8
VW	VW-Replace Switcher Loco.	170,000	Non-road	1	
	Ride Van Plus	\$ 118,800	231	5	1.2
	Park & Ride	\$2,050,000	250	20	1.2
	Transit Service Expansion	\$1,280,048	250	3	1.2
	Ramp Meters	\$3,469,000	312	10	224
	Bike Path	\$ 447,000	180	10	0.2
	Transit Bus - New Service	\$ 958,000	122	12	1.2
	Pedestrian Facility	\$1,632,271	304	10	1.2
	Replace 2009 Diesel School Bus	\$ 120,000	365	2	0
	Replace 2016 Diesel Truck	\$ 270,000	365	2	0
DAQ DERA Projects Benefit/Cost					
Annual kg/\$1,000					

Red

DAQ DERA

	Cost (\$1,000's)	Source Category	Effective Years
Replace 15 SH Class 8	2,025	Mobile	3
Replace 20 SH Class 5-7	1,275	Mobile	3
Replace 3 Ag. Tier 1	450	Non-road	3
Replace 6 Construction Tier 1	900	Non-road	3
Replace 4 Fork Lift Tier 1	600	Non-road	3
Replace 5 300+ HP Diesel	1,875	Non-road	3

DAQ VW

Annual Cost/ton of Nox	Source Category	Effective Years
------------------------	-----------------	-----------------

acts

Emissions Reduced (kg/year)						Benefit/\$1,000
PM2.5	CO	NOx	VOC	PM10	Total	
67887.38	9,062.13	0.00	680.22	426.72	10,169.07	136.3
555.23	687.90	5,517.90	0.00	0.00	6,205.80	52.9
6.34	845.01	57.30	12.86	29.00	944.17	39.7
0.060	19.413	1.000	1.797		20,203	35.4
5.16	721.18	47.53	16.24	23.12	808.06	26.9
33.50	1,610.57	458.14	75.84	122.08	2,266.63	23.2
3.05	1,083.88	45.12	125.09	3.45	1,257.53	21.0
0.352	2.225	6.067	0.531		8,324	19.6
33.44	712.52	436.66	186.09	36.65	1,371.92	16.7
13.10	279.08	171.03	72.89	14.36	537.36	16.0
0.151	0.989	2.765	0.037		3,576	11.9
39.66	845.21	517.97	220.75	43.48	1,627.40	10.2
0.08314505	0.302756439	1	0.072074108		1,323	7.8
0.91	143.23	8.78	5.76	3.80	161.57	6.8
4.54	587.36	40.61	5.95	21.09	655.01	6.4
-1.26	2,529.21	-402.23	161.92	1.92	2,290.82	5.4
35.56	757.76	464.38	197.91	38.98	1,459.04	4.2
0.39	115.10	4.56	12.68	0.53	132.87	3.0
-0.83	153.46	-58.68	5.76	-1.66	98.88	1.2
0.31	85.05	3.93	8.32	0.73	98.04	0.6
0.10	3.43	28.21	1.23	0.11	32.97	0.5
0.14	5.02	12.78	1.23	0.16	19.18	0.1

Reduced Emissions (tons/year)

PM2.5	CO	Nox	VOC	Total kg/year	Benefit/Cost*	Total kg/year w/o CO
0.368	1.34	4.426	0.319	5,854	8.67	4,639
0.352	2.225	6.067	0.531	8,324	19.58	6,305
0.041	0.207	0.288	0.024	508	3.39	320
0.151	0.989	2.765	0.037	3,576	11.92	2,679
0.032	0.131	0.403	0.04	550	2.75	431
0.292	2.131	5.524	0.089	7,290	11.66	5,357

Reduced tons/year

PM2.5	CO	Nox	VOC	Total kg/year	Benefit/Cost*	Total kg/year w/o CO
-------	----	-----	-----	---------------	---------------	----------------------

Benefit
w/o
CO/\$1,000

1.5
4.7
0.8
4.5
2.9
1.3
0.3
14.8
0.4
0.4
8.9
1.0
6.2
0.2
0.0
(0.2)
0.2
0.0
(0.1)
0.0
0.2
0.1

Benefit/C
ost w/o
CO*

6.87
14.84
2.13
8.93
2.15
8.57

Benefit/C
ost w/o
CO*

Replace Diesel Transit Bus#	\$ 710,000	Mobile	1
Replace Diesel School Bus#	\$ 600,000	Mobile	1
Light Duty EV Equipment^	\$ 570,000	Mobile	1
Replace Diesel Shuttle Bus#	\$ 310,000	Mobile	1
Replace Class 4-7 Delivery#	\$ 210,000	Mobile	1
Replace Airport Ground Equipment@	\$ 180,000	Non-road	1
Replace Freight Switcher Locomotive#	\$ 170,000	Non-road	1
Replace SH Class 8#	\$ 70,000	Mobile	1
Replace Diesel Fork Lift##	\$ 60,000	Non-road	1

Use Class 8 pollution proportions above

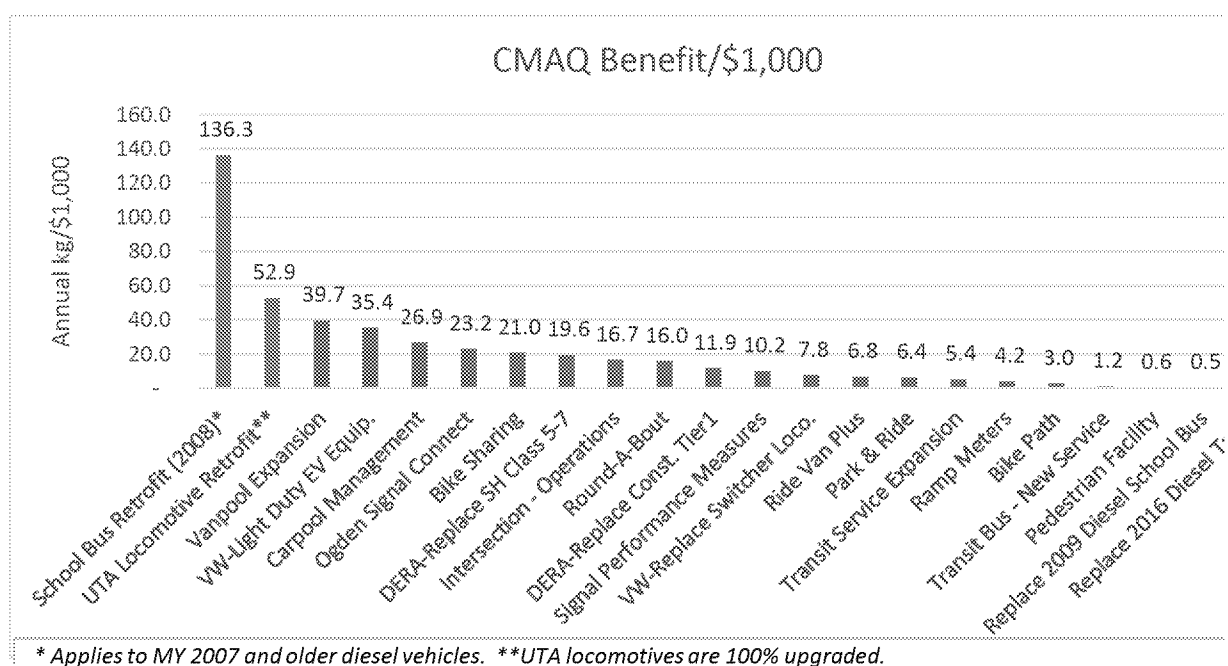
^ Use MOVES rates for passenger car pollution proportions

@ Use Construction Tier 1 pollution proportions above

** Use Class 8 pollution proportions above

& Use Class 8 pollution proportions above

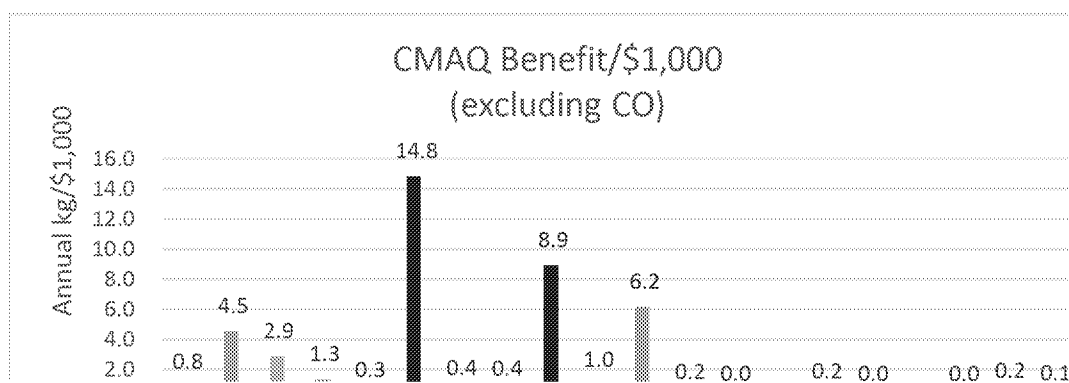
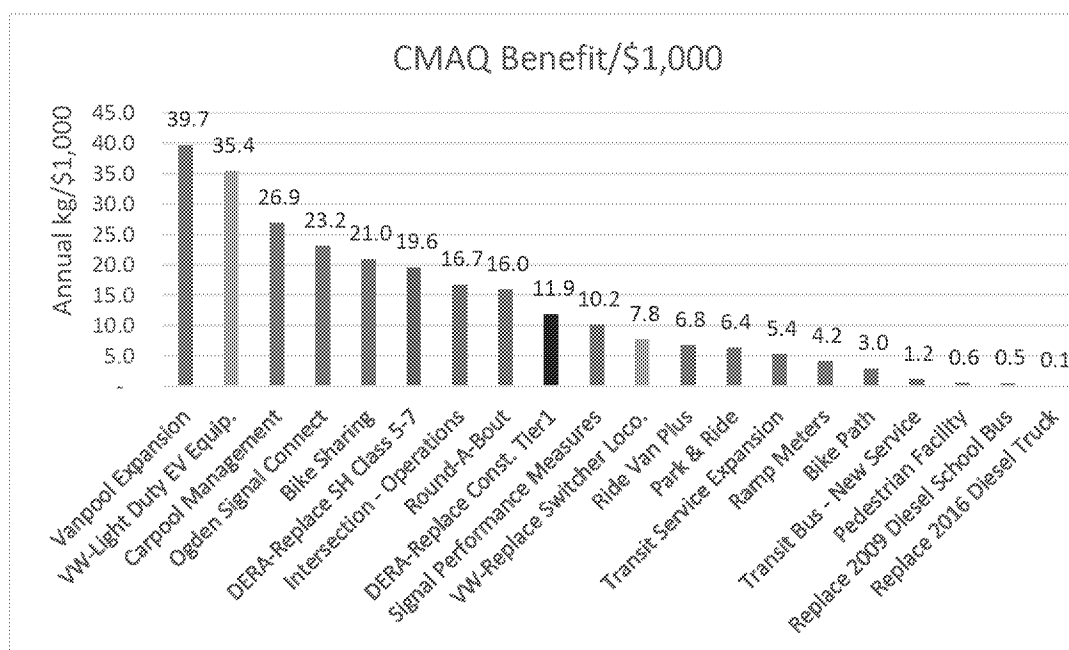
Use Fork Lift pollution proportions above



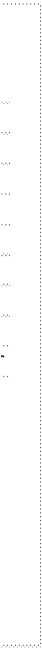
0.083	0.303	1.000	0.072	1,323	1.86	1,048
0.083	0.303	1.000	0.072	1,323	2.20	1,048
0.060	19.413	1.000	1.797	20,203	35.44	2,591
0.083	0.303	1.000	0.072	1,323	4.27	1,048
0.083	0.303	1.000	0.072	1,323	6.30	1,048
0.055	0.325	1.000	0.099	1,342	7.45	1,047
0.083	0.303	1.000	0.072	1,323	7.78	1,048
0.083	0.303	1.000	0.072	1,323	18.90	1,048
0.079	0.325	1.000	0.099	1,364	22.74	1,069

0.012 3.8924 0.201 0.3602

truck



1.48
1.75
4.55
3.38
4.99
5.82
6.16
14.97
17.82





DAQ DERA Projects Benefit/Cost
Annual kg/\$1,000

	Cost (\$1,000's)	Source Category	Reduced Emissions (tons/year)						Total kg/year w/o CO	Effective Years	Benefit /Cost*	Benefit /Cost w/o CO*
							CO	Total kg/year w/o CO				
			Nox	PM2.5	VOC	CO						
DAQ DERA												
Replace 15 SH Class 8	2,025	Mobile	4.426	0.368	0.319	1.34	5,854	4,639	3	8.67	6.87	
Replace 20 SH Class 5-7	1,275	Mobile	6.067	0.352	0.531	2.225	8,324	6,305	3	19.58	14.84	
Replace 3 Ag. Tier 1	450	Non-road	0.288	0.041	0.024	0.207	508	320	3	3.39	2.13	
Replace 6 Construction Tier 1	900	Non-road	2.765	0.151	0.037	0.989	3,576	2,679	3	11.92	8.93	
Replace 4 Fork Lift Tier 1	600	Non-road	0.403	0.032	0.04	0.131	550	431	3	2.75	2.15	
Replace 5 300+ HP Diesel	1,875	Non-road	5.524	0.292	0.089	2.131	7,290	5,357	3	11.66	8.57	

	Annual Cost/ton of Nox	Source Category	Reduced tons/year						Total kg/year w/o CO	Effective Years	Benefit /Cost* /Cost*	Benefit w/o CO*
							CO					
			Nox	PM2.5	VOC							
DAQ VW												
Replace Diesel Transit Bus#	\$ 710,000	Mobile	1.000	0.083	0.072	0.303	1,323	1,048	1	1.86	1.48	
Replace Diesel School Bus#	\$ 600,000	Mobile	1.000	0.083	0.072	0.303	1,323	1,048	1	2.20	1.75	
Light Duty EV Equipment^	\$ 570,000	Mobile	1.000	0.060	1.797	19,413	20,203	2,591	1	35.44	4.55	
Replace Diesel Shuttle Bus#	\$ 310,000	Mobile	1.000	0.083	0.072	0.303	1,323	1,048	1	4.27	3.38	
Replace Class 4-7 Delivery#	\$ 210,000	Mobile	1.000	0.083	0.072	0.303	1,323	1,048	1	6.30	4.99	
Replace Airport Ground Equipment@	\$ 180,000	Non-road	1.000	0.055	0.099	0.325	1,342	1,047	1	7.45	5.82	
Replace Freight Switcher Locomotive#	\$ 170,000	Non-road	1.000	0.083	0.072	0.303	1,323	1,048	1	7.78	6.16	
Replace SH Class 8#	\$ 70,000	Mobile	1.000	0.083	0.072	0.303	1,323	1,048	1	18.90	14.97	
Replace Diesel Fork Lift##	\$ 60,000	Non-road	1.000	0.079	0.099	0.325	1,364	1,069	1	22.74	17.82	

Use Class 8 pollution proportions above
^ Use MOVES rates for passenger car pollution proportions
@ Use Construction Tier 1 pollution proportions above
** Use Class 8 pollution proportions above
Use Fork Lift pollution proportions above

0.201 0.01 0.36 3.892

Section 6. Environmental Results—Outputs, Outcomes and Performance Measures

A. OUTPUTS AND OUTCOMES¹:
The overall goal for UDAQ through this project is to make progress toward meeting attainment of the National Ambient Air Quality Standards (NAAQS) by reducing pollutants that contribute to the wintertime PM_{2.5} and summertime ozone problems the state experiences. To achieve this, the following outputs and outcomes will be accomplished:

Activities	Outputs	Outcomes					
		Approximate Diesel Equivalent Gallons of Fuel Conserved	NO _x (short tons)	PM _{2.5} (short tons)	HC (short tons)	CO (short tons)	CO ₂ (short tons)
Replace 15 short-haul combination Class 8 diesel trucks	15 diesel trucks, average engine model year 2003, permanently disabled and replaced with engines that meet current EPA standards	Annual Reductions	4.875	0.308	0.319	1.34	64.8
		Lifetime Reductions	14,625	937.7	968.5	4,026	184.5
		Lifetime Total Cost Effectiveness	\$293,380	\$2,444,356	\$2,318,908	\$871,620	\$0
		Lifetime Capital Cost Effectiveness	\$293,380	\$2,444,356	\$2,318,908	\$871,620	\$0
Replace 20 short-haul combination Class 5-7 diesel trucks	20 diesel trucks, average engine model year 2003, permanently disabled and replaced with engines that meet current EPA standards	Annual Reductions	9.740	0.607	0.631	2.225	108.6
		Lifetime Reductions	29,220	18,202	1,987.6	6,876	328.7
		Lifetime Total Cost Effectiveness	\$93,354	\$1,008,167	\$1,088,501	\$254,642	\$0
		Lifetime Capital Cost Effectiveness	\$93,354	\$1,008,167	\$1,088,501	\$254,642	\$0
3 agricultural "other", Tier 1, 75 horsepower, average engine model year 2002, permanently disabled and replaced with equivalent equipment that meets current EPA standards	3 agricultural "other", Tier 1, 75 horsepower, average engine model year 2002, permanently disabled and replaced with equivalent equipment that meets current EPA standards	Annual Reductions	0.288	0.041	0.024	0.207	0.0
		Lifetime Reductions	0.863	0.122	0.073	0.632	0.0
		Lifetime Total Cost Effectiveness	\$66,418	\$4,908,937	\$8,291,342	\$985,229	\$0
		Lifetime Capital Cost Effectiveness	\$66,418	\$4,908,937	\$8,291,342	\$985,229	\$0
Replace 13 nonroad 51-300 horsepower diesel equipment	6 construction "other", Tier 1, 300 horsepower, average engine model year 2002, permanently disabled and replaced with equivalent equipment that meets current EPA standards	Annual Reductions	2.765	0.151	0.037	0.989	0.0
		Lifetime Reductions	8,294	0.454	0.112	2.987	0.0
		Lifetime Total Cost Effectiveness	\$144,689	\$2,043,742	\$10,719,352	\$454,405	\$0
		Lifetime Capital Cost Effectiveness	\$144,689	\$2,043,742	\$10,719,352	\$454,405	\$0
4 cargo "other material handling", Tier 1, 175 horsepower, average engine model year 2002, permanently disabled and replaced with equivalent equipment that meets the current EPA standards	4 cargo "other material handling", Tier 1, 175 horsepower, average engine model year 2002, permanently disabled and replaced with equivalent equipment that meets the current EPA standards	Annual Reductions	0.403	0.032	0.04	0.131	0.0
		Lifetime Reductions	1,209	0.097	0.120	0.392	0.0
		Lifetime Total Cost Effectiveness	\$681,481	\$8,254,438	\$6,894,113	\$2,040,978	\$0
		Lifetime Capital Cost Effectiveness	\$681,481	\$8,254,438	\$6,894,113	\$2,040,978	\$0
Replace five nonroad 301+ horsepower diesel equipment	5 construction "other construction equip", Tier 1, 500 horsepower, average engine model year 1997, permanently disabled and replaced with equivalent equipment that meets current EPA standards	Annual Reductions	5.524	0.292	0.089	2.131	0.0
		Lifetime Reductions	16,571	0.877	0.288	6.392	0.0
		Lifetime Total Cost Effectiveness	\$150,863	\$2,850,139	\$9,337,283	\$881,107	\$0
		Lifetime Capital Cost Effectiveness	\$150,863	\$2,850,139	\$9,337,283	\$881,107	\$0
Totals		Annual Reductions	14.615	9.473	1.040	7.023	164.4
		Lifetime Reductions	43,845	5,816	2,712	3,124	21,059
		Lifetime Total Cost Effectiveness	\$1,049,265	\$22,707,783	\$38,895,987	\$4,727,979	\$0
		Lifetime Capital Cost Effectiveness	\$1,049,265	\$22,707,783	\$38,895,987	\$4,727,979	\$0

¹ Calculations are from EPA's Diesel Emissions Quantifier and CO₂ reductions reflect EPA's Greenhouse Gas Emissions Standards for medium and heavy-duty vehicles.

C. BUDGET DETAIL:

SECTION 8. BUDGET DETAIL					
FY19 NATIONAL CLEAN DIESEL FUNDING ASSISTANCE PROGRAM					
			EPA Funding	Other Leveraged Funds	
Personnel (All Listed are 100% FTE)	Annual Salary		10% of Annual FTE for Two Years		
Environmental Planning Consultant	\$61,277			\$12,255	
TOTAL PERSONNEL				\$12,255	\$0
Fringe Benefits					
Calculated based on Personnel account, and includes:					
Retirement, 401k, Social Security, Medicare, Workmans Comp.					
Unemployment Insurance, Long Term Disability, Termination Allowance					
TOTAL FRINGE BENEFITS	calculated at 18%			\$7,108	\$0
Travel					
TOTAL TRAVEL				\$0	\$0
Equipment	Cost/Unit	QTY			
				\$0	\$0
TOTAL EQUIPMENT		0		\$0	\$0
Supplies	Cost/Unit	QTY			
TOTAL SUPPLIES		0		\$0	\$0
Contractual	Labor rate (\$/hour)	Duration (Hours per unit)	QTY		
TOTAL CONTRACTUAL			0	\$0	\$0
Other (includes Participant Support Costs)	Cost/Unit	QTY			
Participant Support Costs					
Class 8 Diesel Vehicle Replacements	\$180,000	15	\$6,75,000	\$2,025,000	
Class 5-7 Diesel Vehicle Replacements	\$85,000	20	\$4,25,000	\$1,275,000	
Nonroad Equipment Replacements, 51-300 Horsepower	\$288,000	13	\$6,56,160	\$1,968,000	
Nonroad Equipment Replacements, 301+ HP Horsepower	\$180,000	5	\$6,75,000	\$1,675,000	
Building & Utilities					
Utilities				\$875	
LAN/WAN				\$445	
Phone				\$365	
Printing/Photocopy				\$488	
TOTAL OTHER			\$3	\$2,378,193	\$7,125,000
TOTAL DIRECT				\$2,397,558	\$7,125,000
TOTAL INDIRECT (Based on DHS Directive 4-RT Capi/Ind Agency Negotiation Agreement)					
Personnel Indirect (from personnel cost apportion)			12.61%	\$2,442	\$0
TOTAL FUNDING				\$2,400,000	\$7,125,000
TOTAL PROJECT COST				\$9,525,000	

Click the item below for the
CMAQ Emissions Analysis Form
that matches your project.

ATMS or ITS

Intersections & Signals

Incident Management

Transit - Bus Service

Transit - Capital

Transit - Fares

Transit - ITS

Transit - LRT Service

Transit - New ECO Pass

Bicycle

Pedestrian

Park & Ride

Vanpools - Expansion

Rideshare Management - Carpools

Rideshare Management - Vanpools

Alternative Fuels

Other

Sample Traffic Study

2025

[illegible]

Diesel Retrofit Analysis
Emissions Benefit/Cost

What is the emission reduction benefit/cost for retrofitting a diesel school bus?

	1993 Diesel School Bus DOC & CCV	1999 Diesel School Bus DOC & CCV	2006 Diesel School Bus DOC & CCV	93-06 Diesel School Bus DOC & CCV
Current Emissions - grams/mile				
PM	0.4601	0.4601	0.4601	
CO	17.7770	6.5140	6.5140	
NOx	21.6930	19.9080	11.2820	
VOC	1.4140	0.3780	0.3960	
Reduction - %				
PM	40%	40%	40%	
CO	60%	60%	60%	
NOx	0%	0%	0%	
VOC	75%	75%	75%	
Emissions Reduced (g/mile)				
PM	0.1840	0.1840	0.1840	
CO	10.6662	3.9084	3.9084	
NOx	0.0000	0.0000	0.0000	
VOC	1.0605	0.2835	0.2970	
Bus Emissions w/o Retrofit (kg/mile)				
PM	5.98	5.98	5.98	
CO	231.10	84.68	84.68	
NOx	282.01	258.80	146.67	
VOC	18.38	4.91	5.15	
Total	537.47	354.38	242.48	
Total Bus Emissions w/o Retrofit (kg/mile)				
PM	0.00	598.13	1,626.91	2,225.04
CO	0.00	8,468.20	23,033.50	31,501.70
NOx	0.00	25,880.40	39,893.15	65,773.55
VOC	0.00	491.40	1,400.26	1,891.66
Total	0.00	35,438.13	65,953.83	101,391.96
Bus Emissions with Retrofit (kg/mile)				
PM	3.59	3.59	3.59	
CO	92.44	33.87	33.87	
NOx	282.01	258.80	146.67	
VOC	4.60	1.23	1.29	
Total	382.63	297.49	185.41	
Total Bus Emissions with Retrofit (kg/mile)				
PM	0.00	358.88	976.15	1,335.03
CO	0.00	3,387.28	9,213.40	12,600.68
NOx	0.00	25,880.40	39,893.15	65,773.55
VOC	0.00	122.85	350.06	472.91
Total	0.00	29,749.41	50,432.77	80,182.17
Emissions reduced Per Bus (kg/mile)				
PM	2.39	2.39	2.39	
CO	138.66	50.81	50.81	
NOx	0.00	0.00	0.00	
VOC	13.79	3.69	3.86	
Total	154.84	56.89	57.06	
Total Emissions Reduced By Bus (kg/year)				
PM	0.00	239.25	650.77	890.02
CO	0.00	5,080.92	13,820.10	18,901.02
NOx	0.00	0.00	0.00	0.00
VOC	0.00	368.55	1,050.19	1,418.74
Total	0.00	5,688.72	15,521.06	21,209.78
Total Emissions Reduced By Bus (kg/day)				
PM	0.00	0.66	1.78	2.44
CO	0.00	13.92	37.86	51.78
NOx	0.00	0.00	0.00	0.00
VOC	0.00	1.01	2.88	3.89
Total	0.00	15.59	42.52	58.11
School Bus Annual Miles	13,000	13,000	13,000	
School Annual Days	175	175	175	
Retrofit Cost	\$ 2,025	\$ 2,025	\$ 2,025	
Retrofit Cost for all buses	\$ -	\$ 202,500	\$ 550,800	\$ 753,300
Useful Life	1	5	12	10.12
Emissions Reduced/Year (kg)	154.84	56.89	57.06	
Emissions Reduced for Life of Project	154.84	284.44	684.75	
Emissions Reduced For All Buses/Year (kg)	-	5,688.72	15,521.06	21,209.78
Emissions Reduced for Life of Project For All Buses	-	28,443.61	#####	214,696.33
Benefit/Cost (Annual kg/\$1,000)*	76.46	140.46	338.15	285.01

58.108991

00-06	00-05	####	##
72	68	4 ##	0.2156863 4
169	158	11 ##	0.6078431 ##
27	24	3 8	0.1568627 3
4	4	0 1	0.0196078 0

School Buses	1993	94-99	00-06	1993-2006
Granite	12	55	72	139
Jordan	4	88	169	261
Salt Lake City	5	19	27	51
Murray	2	5	4	11
Total	23	167	272	462
		(1996-1999)		
School Buses to be Replaced	0	100	272	372

* Compare: Eco Pass = 328, Vanpools = 179, Intersection = 44

		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300		2301		2302		2303		2304		2305		2306		2307		2308		2309		2310		2311		2312		2313		2314		2315		2316		2317		2318		2319		2320		2321		2322		2323		2324		2325		2326		2327		2328		2329		2330		2331		2332		2333		2334		2335		2336		2337		2338		2339		2340		2341		2342		2343		2344		2345		2346		2347		2348		2349		2350		2351		2352		2353		2354		2355		2356		2357		2358		2359		2360		2361		2362		2363		2364		2365		2366		2367		2368		2369		2370		2371		2372		2373		2374		2375		2376		2377		2378		2379		2380		2381		2382		2383		2384		2385		2386		2387		2388		2389		2390		2391		2392		2393		2394		2395		2396		2397		2398		2399		2400		2401		2402		2403		2404		2405		2406		2407		2408		2409		2410		2411		2412		2413		2414		2415		2416		2417		2418		2419		2420		2421		2422		2423		2424		2425		2426		2427		2428		2429		2430		2431		2432		2433		2434		2435		2436		2437		2438		2439		2440		2441		2442		2443		2444		2445		2446		2447		2448		2449		2450		2451		2452		2453		2454		2455		2456		2457		2458		2459		2460		2461		2462		2463		2464		2465		2466		2467		2468		2469		2470		2471		2472		2473		2474		2475		2476		2477		2478		2479		2480		2481		2482		2483		2484		2485		2486		2487		2488		2489		2490		2491		2492		2493		2494		2495		2496		2497		2498		2499		2500		2501		2502		2503		2504		2505		2506		2507		2508		2509		2510		2511		2512		2513		2514		2515		2516		2517		2518		2519		2520		2521		2522		2523		2524		2525		2526		2527		2528		2529		2530		2531		2532		2533		2534		2535		2536		2537		2538		2539		2540		2541		2542		2543		2544		2545		2546		2547		2548		2549		2550		2551		2552		2553		2554		2555		2556		2557		2558		2559		2560		2561		2562		2563		2564		2565		2566		2567		2568		2569		2570		2571		2572		2573		2574		2575		2576		2577		2578		2579		2580		2581		2582		2583		2584		2585		2586		2587		2588		2589		2590		2591		2592		2593		2594		2595		2596		2597		2598		2599		2600		2601		2602		2603		2604		2605		2606		2607		2608		2609		2610		2611		2612		2613		2614		2615		2616		2617		2618		2619		2620		2621		2622		2623		2624		2625		2626		2627		2628		2629		2630		2631		2632		2633		2634		2635		2636		2637		2638		2639		2640		2641		2642		2643		2644		2645		2646		2647		2648		2649		2650		2651		2652		2653		2654		2655		2656		2657		2658		2659		2660		2661		2662		2663		2664		2665		2666		2667		2668		2669		2670		2671		2672		2673		2674		2675		2676		2677		2678		2679		2680		2681		2682		2683		2684		2685		2686		2687		2688		2689		2690		2691		2692		2693		2694		2695		2696		2697		2698		2699		2700		2701		2702		2703		2704		2705		2706		2707		2708		2709		2710		2711		2712		2713		2714		2715		2716		2717		2718		2719		2720		2721		2722		2723		2724		2725		2726		2727		2728		2729		2730		2731		2732		2733		2734		2735		2736		2737		2738		2739		2740		2741		2742		2743		2744		2745		2746		2747		2748		2749		2750		2751		2752		2753		2754		2755		2756		2757		2758		2759		2760		2761		2762		2763		2764		2765		2766		2767		2768		2769		2770		2771		2772		2773		2774		2775		2776		2777		2778		2779		2780		2781		2782		2783		2784		2785		2786		2787		2788		2789		2790		2791		2792		2793		2794		2795		2796		2797		2798		2799		2800		2801		2802		2803		2804		2805		2806		2807		2808		2809		2810		2811		2812		2813		2814		2815		2816		2817		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CMAP Estimation Analysis Form (2013-2017)

Estimate the Regression Model and the
Predicted Value of the Response Variable

Project Information

Project Name:

Project Manager:

Phone:

Email:

Project Description

Type of Project:

Location:

Time of Project:

Project Manager:

Project Description:

Project Results

Model Type:

Model Description:

Model Results:

Model Description:

Model Type	Model Description	Model Results	Model Description	Model Results
Linear	The model is a linear regression model with the following equation: Y = 0.5X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Linear	0.85
Quadratic	The model is a quadratic regression model with the following equation: Y = 0.5X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Quadratic	0.85
Cubic	The model is a cubic regression model with the following equation: Y = 0.5X^3 + 1.2X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Cubic	0.85
Quartic	The model is a quartic regression model with the following equation: Y = 0.5X^4 + 1.2X^3 + 1.2X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Quartic	0.85

Model Type	Model Description	Model Results	Model Description	Model Results
Linear	The model is a linear regression model with the following equation: Y = 0.5X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Linear	0.85
Quadratic	The model is a quadratic regression model with the following equation: Y = 0.5X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Quadratic	0.85
Cubic	The model is a cubic regression model with the following equation: Y = 0.5X^3 + 1.2X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Cubic	0.85
Quartic	The model is a quartic regression model with the following equation: Y = 0.5X^4 + 1.2X^3 + 1.2X^2 + 1.2X + 1.2. The model is based on 10 data points and has a coefficient of determination of 0.85. The model is used to estimate the predicted value of the response variable for a given value of the predictor variable.	0.85	Quartic	0.85

										10/27		10/28		10/29		10/30		10/31		11/1		11/2		11/3		11/4		11/5		11/6		11/7		11/8		11/9		11/10		11/11		11/12		11/13		11/14		11/15		11/16		11/17		11/18		11/19		11/20		11/21		11/22		11/23		11/24		11/25		11/26		11/27		11/28		11/29		11/30		12/1		12/2		12/3		12/4		12/5		12/6		12/7		12/8		12/9		12/10		12/11		12/12		12/13		12/14		12/15		12/16		12/17		12/18		12/19		12/20		12/21		12/22		12/23		12/24		12/25		12/26		12/27		12/28		12/29		12/30		12/31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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School Bus Replacement - Test Case using MOVES

	Old Bus	New Bus	Benefit
Cost		\$120,000	
Model Year	2009	2026	
Useful Life of Bus	19	19	
Effective Life of Project		2	
Annual Miles	11,000	11,000	
Fuel	diesel	diesel	
CO Rate (g/mile)	6 1.3966	1.0850	
Nox Rate (g/mile)	7 3.2219	0.6572	
VOC Rate (g/mile)	8 0.1735	0.1243	
PM2.5 Exhaust Rate (g/mile)	9 0.0194	0.0104	
PM2.5 Brake Wear (g/mile)	10 0.0170	0.0170	
PM2.5 Tire Wear (g/mile)	11 0.0028	0.0028	
PM10 Exhaust Rate (g/mile)	12 0.0211	0.0113	
PM10 Brake Wear (g/mile)	13 0.1358	0.1358	
PM10 Tire Wear (g/mile)	14 0.0184	0.0184	
CO Emissions (kg/year)	15.36	11.94	3.43
Nox Emissions (kg/year)	35.44	7.23	28.21
VOC Emissions (kg/year)	1.91	1.37	0.54
PM2.5 Exhaust Rate (kg/year)	0.21	0.11	0.10
PM2.5 Brake Wear (kg/year)	0.19	0.19	0.00
PM2.5 Tire Wear (kg/year)	0.03	0.03	0.00
PM10 Exhaust Rate (kg/year)	0.23	0.12	0.11
PM10 Brake Wear (kg/year)	1.49	1.49	0.00
PM10 Tire Wear (kg/year)	0.20	0.20	0.00
Total Emissions Reduced (kg/year)			64.77
Benefit/Cost (Annual kg/\$1,000)			0.54

Short Haul Truck Replacement - Test Case

CMAQ Guidance, Nov 2013 - p17: used for highway construction, not maintenance; p 16: based in the nonattainment are

Cost

Model Year

Useful Life

Effective Life of Project

Annual Miles

Fuel

CO Rate (g/mile)

Nox Rate (g/mile)

VOC Rate (g/mile)

PM2.5 Exhaust Rate (g/mile)

PM2.5 Brake Wear (g/mile)

PM2.5 Tire Wear (g/mile)

PM10 Exhaust Rate (g/mile)

PM10 Brake Wear (g/mile)

PM10 Tire Wear (g/mile)

CO Emissions (kg/year)

Nox Emissions (kg/year)

VOC Emissions (kg/year)

PM2.5 Exhaust Rate (kg/year)

PM2.5 Brake Wear (kg/year)

PM2.5 Tire Wear (kg/year)

PM10 Exhaust Rate (kg/year)

PM10 Brake Wear (kg/year)

PM10 Tire Wear (kg/year)

Total Emissions Reduced (kg/year)

Benefit/Cost (Annual kg/\$1,000)

'a

	Old Truck	New Bus	Benefit
	\$270,000		
	2016	2026	
	12	12	
		2	
	20,000	20,000	
	diesel	diesel	
6	0.8707	0.6196	
7	1.3747	0.7358	
8	0.1930	0.1316	
9	0.0194	0.0123	
10	0.0210	0.0210	
11	0.0029	0.0029	
12	0.0211	0.0133	
13	0.1681	0.1681	
14	0.0193	0.0193	
	17.41	12.39	5.02
	27.49	14.72	12.78
	3.86	2.63	1.23
	0.39	0.25	0.14
	0.42	0.42	0.00
	0.06	0.06	0.00
	0.42	0.27	0.16
	3.36	3.36	0.00
	0.39	0.39	0.00

38.65

0.14

[illegible]

CMX Remediation Action Form (2021-01-17)

Project Information

Project Name

Project Manager

Client

Address

Project Location

Project Description

Project Details

Project Summary

Project Schedule

Project Budget

Project Schedule

Project Budget

Project Schedule

Project Budget

Activity	Start Date	End Date	Duration	Status	Assigned To	Comments
Site Assessment	2021-01-15	2021-01-20	5 Days	Completed	John Doe	Initial site visit and data collection.
Soil Sampling	2021-01-22	2021-01-25	3 Days	In Progress	Jane Smith	Sampling of 10 soil samples.
Water Sampling	2021-01-28	2021-01-30	2 Days	Planned	John Doe	Sampling of 5 water samples.
Groundwater Monitoring	2021-02-01	2021-02-05	5 Days	Planned	Jane Smith	Installation of 3 monitoring wells.
Remediation Design	2021-02-08	2021-02-15	7 Days	Planned	John Doe	Design of remediation system.
Remediation Construction	2021-02-18	2021-03-05	16 Days	Planned	Jane Smith	Construction of remediation system.
Remediation Monitoring	2021-03-08	2021-03-15	7 Days	Planned	John Doe	Monitoring of remediation system.
Final Site Assessment	2021-03-18	2021-03-20	2 Days	Planned	Jane Smith	Final site visit and data collection.

CMAP Business Analysis Form (2019-2021 TAP)

Business Information

Please complete operator information below.

Project Name

Project Manager

Project Number

Project Date

Project Location

Project Address

Project City

Project State

Project Zip

Project Country

Project Description

Project Details

Project Notes

Business Information	Business Name	Business Address	Business City	Business State	Business Zip
100	1000	1000	1000	1000	1000
200	2000	2000	2000	2000	2000
300	3000	3000	3000	3000	3000
400	4000	4000	4000	4000	4000
500	5000	5000	5000	5000	5000
600	6000	6000	6000	6000	6000
700	7000	7000	7000	7000	7000
800	8000	8000	8000	8000	8000
900	9000	9000	9000	9000	9000
1000	10000	10000	10000	10000	10000

Business Information	Business Name	Business Address	Business City	Business State	Business Zip
100	1000	1000	1000	1000	1000
200	2000	2000	2000	2000	2000
300	3000	3000	3000	3000	3000
400	4000	4000	4000	4000	4000
500	5000	5000	5000	5000	5000
600	6000	6000	6000	6000	6000
700	7000	7000	7000	7000	7000
800	8000	8000	8000	8000	8000
900	9000	9000	9000	9000	9000
1000	10000	10000	10000	10000	10000

ONAG National Audit Form (2013-2017)

Form 1-Form

Enter your site name and address in the following

Project Information

Project Name

Project Manager

Phone

Email

Project Number

Project Date

Project Location

State

County

City

Zip

Address

Project Year

Year

Project Description

Project Details

Project Details

Project Name

Project Number

Project Date

Project Manager

Project Phone

Project Email

Project Address

Project City

Project State

Project Zip

Project Year

Project Description

Project Details

Project Name	Project Number	Project Date	Project Manager	Project Phone	Project Email	Project Address	Project City	Project State	Project Zip	Project Year	Project Description	Project Details
Project Name	Project Number	Project Date	Project Manager	Project Phone	Project Email	Project Address	Project City	Project State	Project Zip	Project Year	Project Description	Project Details

Project Name	Project Number	Project Date	Project Manager	Project Phone	Project Email	Project Address	Project City	Project State	Project Zip	Project Year	Project Description	Project Details
Project Name	Project Number	Project Date	Project Manager	Project Phone	Project Email	Project Address	Project City	Project State	Project Zip	Project Year	Project Description	Project Details

ONAQ Estimation Worksheet Form (2013-2017) (17)

Form: 17-1 (2013-2017) (17)

Form: 17-1 (2013-2017) (17)

Project Information

Project Name:

Project Number:

Project Manager:

Project Status:

Project Description

Type of Project:

Location:

City:

State:

County:

Tract:

Tract Number:

Tract Name:

Tract Address:

Tract Phone:

Tract Fax:

Tract Email:

Tract Website:

Tract Other:

Project Details

Project Name:

Project Number:

Project Manager:

Project Status:

Project Description:

Project Location:

Project City:

Project State:

Project County:

Project Tract:

Project Tract Number:

Project Tract Name:

Project Tract Address:

Project Tract Phone:

Project Tract Fax:

Project Tract Email:

Project Tract Website:

Project Tract Other:

Project Name	Project Number	Project Manager	Project Status	Project Description	Project Location	Project City	Project State	Project County	Project Tract	Project Tract Number	Project Tract Name	Project Tract Address	Project Tract Phone	Project Tract Fax	Project Tract Email	Project Tract Website	Project Tract Other
17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)

Project Name	Project Number	Project Manager	Project Status	Project Description	Project Location	Project City	Project State	Project County	Project Tract	Project Tract Number	Project Tract Name	Project Tract Address	Project Tract Phone	Project Tract Fax	Project Tract Email	Project Tract Website	Project Tract Other
17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)	17-1 (2013-2017) (17)

ED_005329A_00001711-00038

CMQ Evaluation Entry (201.181 TB)

Other Information

Final report of the project. Please provide a brief description of the project.

Project Information

Project Name: [Project Name]

Project Manager: [Project Manager]

Project Number: [Project Number]

Project Status: [Project Status]

Project Details

Type of Project: [Type of Project]

Location: [Location]

Start Date: [Start Date]

End Date: [End Date]

Project Manager: [Project Manager]

Project Number: [Project Number]

Project Status: [Project Status]

Project Summary

Project Description: [Project Description]

Project Objectives: [Project Objectives]

Project Results: [Project Results]

Project Name	Project Manager	Project Number	Project Status
Project Name	Project Manager	Project Number	Project Status

Project Name	Project Manager	Project Number	Project Status
Project Name	Project Manager	Project Number	Project Status

CMQ Control on Analysis Form (2013-2017) TP

Other Information

Examination of the specimen and analysis

Please complete information to all new donor only

Project Number

Project Name

Project Manager

Project Site

Project Date

Project Time

Project Location

Project Address

Project City

Project State

Project Zip

Project Country

Project Phone

Project Email

Project Fax

Project Web

Project Notes

Project Details

Project Description

Project Objectives

Project Results

Project Summary

Project Conclusion

Project Recommendation

Project Approval

Project Signature

Project Date

Project Time

Project Location

Project Address

Project City

Project State

Project Zip

Project Country

Project Phone

Project Email

Project Fax

Project Web

Project Notes

Project Details	Project Description	Project Objectives	Project Results	Project Summary	Project Conclusion	Project Recommendation	Project Approval	Project Signature	Project Date	Project Time	Project Location	Project Address	Project City	Project State	Project Zip	Project Country	Project Phone	Project Email	Project Fax	Project Web	Project Notes
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Project Details	Project Description	Project Objectives	Project Results	Project Summary	Project Conclusion	Project Recommendation	Project Approval	Project Signature	Project Date	Project Time	Project Location	Project Address	Project City	Project State	Project Zip	Project Country	Project Phone	Project Email	Project Fax	Project Web	Project Notes
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

					Emission Rate (grams/mile)	
	Fuel	Vehicle Type	Year	Miles	Carbon Monoxide (CO)	Oxides of Nitrogen (NOx)
1.0.1	gasoline	#N/A	.0.1	29,378,422	4.0248	0.1866
1.11.11	gasoline	MC	1.11	74,124	15.5594	0.8343
1.11.1996	gasoline	MC	1996	1,071	67.9216	1.4440
1.11.1997	gasoline	MC	1997	78	64.5012	1.4067
1.11.1998	gasoline	MC	1998	103	61.5623	1.3746
1.11.1999	gasoline	MC	1999	116	59.4935	1.3521
1.11.2000	gasoline	MC	2000	159	56.7732	1.3224
1.11.2001	gasoline	MC	2001	238	36.6774	1.2791
1.11.2002	gasoline	MC	2002	285	35.8688	1.2586
1.11.2003	gasoline	MC	2003	377	35.1571	1.2406
1.11.2004	gasoline	MC	2004	567	27.7927	1.0432
1.11.2005	gasoline	MC	2005	722	27.5089	1.0361
1.11.2006	gasoline	MC	2006	716	27.2403	0.9849
1.11.2007	gasoline	MC	2007	923	26.9038	0.9780
1.11.2008	gasoline	MC	2008	1,175	21.7776	0.9347
1.11.2009	gasoline	MC	2009	1,606	21.3487	0.9266
1.11.2010	gasoline	MC	2010	1,568	19.9242	0.9192
1.11.2011	gasoline	MC	2011	1,206	18.6052	0.9123
1.11.2012	gasoline	MC	2012	517	17.3356	0.9047
1.11.2013	gasoline	MC	2013	626	16.1350	0.8966
1.11.2014	gasoline	MC	2014	1,168	15.8746	0.8882
1.11.2015	gasoline	MC	2015	1,258	15.6395	0.8807
1.11.2016	gasoline	MC	2016	1,502	15.3761	0.8722
1.11.2017	gasoline	MC	2017	1,593	15.1193	0.8639
1.11.2018	gasoline	MC	2018	1,513	14.8525	0.8553
1.11.2019	gasoline	MC	2019	1,397	14.5687	0.8462
1.11.2020	gasoline	MC	2020	3,064	14.2822	0.8370
1.11.2021	gasoline	MC	2021	3,655	13.9810	0.8273
1.11.2022	gasoline	MC	2022	4,451	13.6571	0.8169
1.11.2023	gasoline	MC	2023	5,588	13.3067	0.8056
1.11.2024	gasoline	MC	2024	7,344	12.9168	0.7931
1.11.2025	gasoline	MC	2025	10,073	12.4638	0.7785
1.11.2026	gasoline	MC	2026	19,464	11.8079	0.7574
1.21.21	gasoline	Pass Car	1.21	16,333,642	3.7847	0.1599
1.21.1996	gasoline	Pass Car	1996	142,826	25.3014	2.2134
1.21.1997	gasoline	Pass Car	1997	9,254	25.3015	2.2134
1.21.1998	gasoline	Pass Car	1998	11,295	25.1118	2.2036
1.21.1999	gasoline	Pass Car	1999	17,766	24.7989	2.1873
1.21.2000	gasoline	Pass Car	2000	23,103	24.3817	2.1655
1.21.2001	gasoline	Pass Car	2001	30,766	12.4515	0.9511
1.21.2002	gasoline	Pass Car	2002	41,249	11.9612	0.9002

							Emissions (grams)
Volatile Organic Compounds	Primary Exhaust PM2.5 - Total	Primary PM2.5 - Brakewear Particulate	Primary PM2.5 - Tirewear Particulate	Primary Exhaust PM10 - Total	Primary PM10 - Brakewear Particulate	Primary PM10 - Tirewear Particulate	Carbon Monoxide (CO)
0.3455	0.0135	0.0046	0.0015	0.0152	0.0371	0.0102	118,242.470.9754
2.8221	0.0312	0.0025	0.0008	0.0353	0.0200	0.0051	1,153,321.8624
23.9564	0.1675	0.0025	0.0008	0.1894	0.0200	0.0051	72,730.2670
22.1445	0.1652	0.0025	0.0008	0.1868	0.0200	0.0051	5,028.6312
19.5606	0.1632	0.0025	0.0008	0.1845	0.0200	0.0051	6,346.3241
18.4214	0.1618	0.0025	0.0008	0.1829	0.0200	0.0051	6,917.7981
17.2343	0.1600	0.0025	0.0008	0.1808	0.0200	0.0051	9,053.4700
14.8486	0.1477	0.0025	0.0008	0.1669	0.0200	0.0051	8,737.1890
14.0339	0.1468	0.0025	0.0008	0.1659	0.0200	0.0051	10,205.7820
13.3170	0.1460	0.0025	0.0008	0.1650	0.0200	0.0051	13,258.9590
12.1900	0.0355	0.0025	0.0008	0.0401	0.0200	0.0051	15,768.5680
11.9007	0.0351	0.0025	0.0008	0.0397	0.0200	0.0051	19,849.4680
10.8230	0.0348	0.0025	0.0008	0.0394	0.0200	0.0051	19,502.1360
5.6977	0.0345	0.0025	0.0008	0.0389	0.0200	0.0051	24,845.1960
5.3068	0.0341	0.0025	0.0008	0.0385	0.0200	0.0051	25,579.8760
5.1403	0.0337	0.0025	0.0008	0.0381	0.0200	0.0051	34,280.6910
4.8541	0.0325	0.0025	0.0008	0.0368	0.0200	0.0051	31,233.2630
4.6098	0.0315	0.0025	0.0008	0.0356	0.0200	0.0051	22,437.3840
3.1239	0.0305	0.0025	0.0008	0.0344	0.0200	0.0051	8,962.7430
2.9512	0.0295	0.0025	0.0008	0.0333	0.0200	0.0051	10,107.7940
2.8568	0.0292	0.0025	0.0008	0.0330	0.0200	0.0051	18,541.8880
2.7717	0.0289	0.0025	0.0008	0.0327	0.0200	0.0051	19,677.5280
2.6118	0.0286	0.0025	0.0008	0.0323	0.0200	0.0051	23,093.5230
2.2420	0.0283	0.0025	0.0008	0.0320	0.0200	0.0051	24,091.6810
2.1525	0.0280	0.0025	0.0008	0.0317	0.0200	0.0051	22,478.5350
2.0715	0.0277	0.0025	0.0008	0.0313	0.0200	0.0051	20,348.5580
1.9803	0.0274	0.0025	0.0008	0.0309	0.0200	0.0051	43,761.3300
1.8962	0.0270	0.0025	0.0008	0.0305	0.0200	0.0051	51,100.0300
1.7983	0.0266	0.0025	0.0008	0.0301	0.0200	0.0051	60,782.4000
1.6943	0.0262	0.0025	0.0008	0.0297	0.0200	0.0051	74,361.1900
1.5912	0.0258	0.0025	0.0008	0.0292	0.0200	0.0051	94,864.6200
1.4714	0.0253	0.0025	0.0008	0.0286	0.0200	0.0051	125,546.2900
1.2980	0.0245	0.0025	0.0008	0.0277	0.0200	0.0051	229,828.7500
0.3521	0.0122	0.0043	0.0015	0.0138	0.0346	0.0101	61,818,575.3151
3.5354	0.2251	0.0043	0.0015	0.2545	0.0346	0.0101	3,613,692.2472
3.5284	0.2362	0.0043	0.0015	0.2671	0.0346	0.0101	234,132.3854
3.4503	0.2093	0.0043	0.0015	0.2366	0.0346	0.0101	283,643.2780
3.3937	0.1859	0.0043	0.0015	0.2102	0.0346	0.0101	440,587.9562
3.3337	0.1863	0.0043	0.0015	0.2106	0.0346	0.0101	563,298.5126
2.1075	0.1253	0.0043	0.0015	0.1417	0.0346	0.0101	383,083.5702
2.0335	0.1149	0.0043	0.0015	0.1299	0.0346	0.0101	493,392.0606

6

7

8

9

10

11

Oxides of Nitrogen (NOx)	Volatile Organic Compounds	Primary Exhaust PM2.5 - Total	Primary PM2.5 - Brakewear Particulate	Primary PM2.5 - Tirewear Particulate	Primary Exhaust PM10 - Total
5,482,142.6096	10,150,420.1558	396,025.8702	136,380.5003	44,950.5655	447,679.4203
61,844.7948	209,184.2922	2,313.7472	185.5005	56.2585	2,615.5300
1,546.2833	25,652.4369	179.3979	2.6797	0.8127	202.7968
109.6701	1,726.4245	12.8804	0.1951	0.0592	14.5604
141.7086	2,016.4582	16.8259	0.2580	0.0782	19.0205
157.2151	2,142.0065	18.8156	0.2910	0.0883	21.2697
210.8743	2,748.3046	25.5097	0.3991	0.1210	28.8369
304.6931	3,537.1805	35.1809	0.5962	0.1808	39.7696
358.1116	3,993.0686	41.7627	0.7121	0.2160	47.2098
467.8766	5,022.3032	55.0538	0.9438	0.2862	62.2346
591.8782	6,916.1560	20.1249	1.4199	0.4306	22.7498
747.6228	8,587.1274	25.3602	1.8058	0.5477	28.6679
705.1090	7,748.5112	24.9420	1.7917	0.5434	28.1952
903.1719	5,261.7251	31.8172	2.3111	0.7009	35.9671
1,097.8966	6,233.3002	40.0465	2.9395	0.8915	45.2699
1,487.9588	8,254.0720	54.0766	4.0185	1.2187	61.1300
1,440.9520	7,609.3526	50.9980	3.9230	1.1898	57.6497
1,100.2331	5,559.2351	37.9595	3.0180	0.9153	42.9105
467.7422	1,615.1113	15.7434	1.2939	0.3924	17.7968
561.6707	1,848.7608	18.4634	1.5677	0.4755	20.8716
1,037.4579	3,336.8437	34.0775	2.9231	0.8865	38.5223
1,108.0364	3,487.3154	36.3703	3.1487	0.9549	41.1140
1,309.9446	3,922.7538	42.9631	3.7586	1.1399	48.5668
1,376.6158	3,572.5771	45.1137	3.9877	1.2094	50.9979
1,294.5256	3,257.7666	42.3875	3.7875	1.1487	47.9162
1,181.9427	2,893.3387	38.6655	3.4954	1.0601	43.7086
2,564.6218	6,067.6204	83.8182	7.6680	2.3255	94.7506
3,023.8180	6,930.7069	98.7249	9.1468	2.7740	111.6014
3,635.7140	8,003.5246	118.5685	11.1380	3.3779	134.0334
4,502.0800	9,468.0681	146.6385	13.9850	4.2414	165.7645
5,824.7140	11,686.1521	189.4448	18.3796	5.5742	214.1541
7,841.9880	14,821.5757	254.6132	25.2081	7.6451	287.8225
14,742.6680	25,264.5145	477.4027	48.7101	14.7728	539.6710
2,610,936.7103	5,750,742.3664	198,792.7458	70,544.1156	24,786.7563	224,721.2811
316,135.7749	504,950.9499	32,150.7224	616.8540	216.7418	36,344.1212
20,482.5583	32,650.6029	2,186.0908	39.9661	14.0428	2,471.2235
24,889.7435	38,972.0620	2,364.1198	48.7835	17.1408	2,672.4671
38,859.6943	60,293.5582	3,303.6387	76.7322	26.9611	3,734.5378
50,030.5751	77,019.6367	4,304.1504	99.7820	35.0599	4,865.5429
29,261.1794	64,838.4808	3,856.1228	132.8768	46.6883	4,359.0795
37,134.6963	83,880.1231	4,741.3849	178.1538	62.5971	5,359.8081

12

13

Primary PM10 - Brakewear Particulate	Primary PM10 - Tirewear Particulate
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1,091,043.5975	299,671.9191
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1,484.0029	375.0584
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21.4379	5.4181
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1.5608	0.3945
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2.0639	0.5216
--------	--------

2.3280	0.5884
--------	--------

3.1926	0.8069
--------	--------

4.7692	1.2053
--------	--------

5.6965	1.4397
--------	--------

7.5505	1.9083
--------	--------

11.3589	2.8708
---------	--------

14.4462	3.6510
---------	--------

14.3333	3.6225
---------	--------

18.4887	4.6727
---------	--------

23.5161	5.9433
---------	--------

32.1480	8.1249
---------	--------

31.3843	7.9319
---------	--------

24.1442	6.1021
---------	--------

10.3509	2.6160
---------	--------

12.5419	3.1698
---------	--------

23.3845	5.9101
---------	--------

25.1897	6.3663
---------	--------

30.0690	7.5995
---------	--------

31.9016	8.0626
---------	--------

30.3002	7.6579
---------	--------

27.9635	7.0673
---------	--------

61.3438	15.5037
---------	---------

73.1745	18.4937
---------	---------

89.1036	22.5195
---------	---------

111.8799	28.2759
----------	---------

147.0369	37.1613
----------	---------

201.6643	50.9674
----------	---------

389.6796	98.4855
----------	---------

564,352.7793	165,245.8817
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4,934.8363	1,444.9522
------------	------------

319.7292	93.6189
----------	---------

390.2664	114.2728
----------	----------

613.8582	179.7413
----------	----------

798.2553	233.7339
----------	----------

1,063.0139	311.2564
------------	----------

1,425.2295	417.3180
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1.21.2003	gasoline	Pass Car	2003	51,074	11.6793	0.8262
1.21.2004	gasoline	Pass Car	2004	66,786	11.0010	0.5298
1.21.2005	gasoline	Pass Car	2005	86,356	10.4236	0.4305
1.21.2006	gasoline	Pass Car	2006	111,014	9.9915	0.3833
1.21.2007	gasoline	Pass Car	2007	158,375	9.4417	0.3234
1.21.2008	gasoline	Pass Car	2008	206,046	9.1300	0.2978
1.21.2009	gasoline	Pass Car	2009	281,947	8.8282	0.2727
1.21.2010	gasoline	Pass Car	2010	323,525	8.0383	0.2495
1.21.2011	gasoline	Pass Car	2011	293,254	7.3419	0.2424
1.21.2012	gasoline	Pass Car	2012	406,254	6.2232	0.2151
1.21.2013	gasoline	Pass Car	2013	475,560	5.6307	0.2093
1.21.2014	gasoline	Pass Car	2014	692,486	5.5114	0.2038
1.21.2015	gasoline	Pass Car	2015	862,889	5.4004	0.1988
1.21.2016	gasoline	Pass Car	2016	645,043	5.2975	0.1941
1.21.2017	gasoline	Pass Car	2017	650,596	3.1052	0.1378
1.21.2018	gasoline	Pass Car	2018	614,206	2.9559	0.1296
1.21.2019	gasoline	Pass Car	2019	823,294	2.7630	0.1093
1.21.2020	gasoline	Pass Car	2020	1,205,236	2.6309	0.1028
1.21.2021	gasoline	Pass Car	2021	1,255,920	2.4237	0.0913
1.21.2022	gasoline	Pass Car	2022	1,297,430	2.3094	0.0859
1.21.2023	gasoline	Pass Car	2023	1,336,950	1.7844	0.0698
1.21.2024	gasoline	Pass Car	2024	1,368,101	1.7180	0.0664
1.21.2025	gasoline	Pass Car	2025	1,396,055	1.6609	0.0629
1.21.2026	gasoline	Pass Car	2026	1,448,987	1.6363	0.0619
1.31.31	gasoline	Pass Truck	1.31	10,123,314	3.7797	0.1982
1.31.1996	gasoline	Pass Truck	1996	59,035	30.0947	3.3019
1.31.1997	gasoline	Pass Truck	1997	12,367	31.9097	3.2373
1.31.1998	gasoline	Pass Truck	1998	12,179	31.1945	3.2076
1.31.1999	gasoline	Pass Truck	1999	17,023	31.5964	3.2420
1.31.2000	gasoline	Pass Truck	2000	16,162	31.2650	3.2137
1.31.2001	gasoline	Pass Truck	2001	31,172	17.8077	1.6059
1.31.2002	gasoline	Pass Truck	2002	39,233	17.6172	1.5878
1.31.2003	gasoline	Pass Truck	2003	33,391	17.9473	1.6473
1.31.2004	gasoline	Pass Truck	2004	34,857	13.9354	0.9311
1.31.2005	gasoline	Pass Truck	2005	44,216	12.5859	0.7112
1.31.2006	gasoline	Pass Truck	2006	59,652	11.9871	0.5437
1.31.2007	gasoline	Pass Truck	2007	77,121	11.0972	0.4548
1.31.2008	gasoline	Pass Truck	2008	120,156	10.5386	0.4068
1.31.2009	gasoline	Pass Truck	2009	162,383	9.8412	0.3500
1.31.2010	gasoline	Pass Truck	2010	100,830	8.9790	0.3212
1.31.2011	gasoline	Pass Truck	2011	91,609	8.3757	0.3178
1.31.2012	gasoline	Pass Truck	2012	68,536	6.8526	0.2797
1.31.2013	gasoline	Pass Truck	2013	138,029	6.2813	0.2727
1.31.2014	gasoline	Pass Truck	2014	230,226	6.1529	0.2663
1.31.2015	gasoline	Pass Truck	2015	263,928	6.0333	0.2603
1.31.2016	gasoline	Pass Truck	2016	356,631	5.9231	0.2548
1.31.2017	gasoline	Pass Truck	2017	563,401	3.9357	0.2329

1.9522	0.1057	0.0043	0.0015	0.1194	0.0346	0.0101	596,507.7925
1.8000	0.0541	0.0043	0.0015	0.0611	0.0346	0.0101	734,708.9604
1.7275	0.0524	0.0043	0.0015	0.0592	0.0346	0.0101	900,136.7072
1.2776	0.0507	0.0043	0.0015	0.0573	0.0346	0.0101	1,109,200.8547
0.8763	0.0330	0.0043	0.0015	0.0373	0.0346	0.0101	1,495,333.5279
0.8381	0.0319	0.0043	0.0015	0.0361	0.0346	0.0101	1,881,208.9201
0.8015	0.0309	0.0043	0.0015	0.0349	0.0346	0.0101	2,489,081.8500
0.7042	0.0281	0.0043	0.0015	0.0318	0.0346	0.0101	2,600,579.1999
0.6274	0.0255	0.0043	0.0015	0.0289	0.0346	0.0101	2,153,033.7943
0.4495	0.0156	0.0043	0.0015	0.0176	0.0346	0.0101	2,528,217.3875
0.3961	0.0141	0.0043	0.0015	0.0160	0.0346	0.0101	2,677,759.1083
0.3822	0.0138	0.0043	0.0015	0.0156	0.0346	0.0101	3,816,580.3866
0.3692	0.0135	0.0043	0.0015	0.0152	0.0346	0.0101	4,659,977.2277
0.3491	0.0131	0.0043	0.0015	0.0149	0.0346	0.0101	3,417,129.2847
0.2620	0.0084	0.0043	0.0015	0.0095	0.0346	0.0101	2,020,222.6708
0.2487	0.0079	0.0043	0.0015	0.0089	0.0346	0.0101	1,815,544.9939
0.2296	0.0062	0.0043	0.0015	0.0070	0.0346	0.0101	2,274,765.8653
0.2189	0.0052	0.0043	0.0015	0.0058	0.0346	0.0101	3,170,846.5863
0.2064	0.0037	0.0043	0.0015	0.0042	0.0346	0.0101	3,043,988.4474
0.1976	0.0036	0.0043	0.0015	0.0041	0.0346	0.0101	2,996,293.7589
0.1793	0.0029	0.0043	0.0015	0.0033	0.0346	0.0101	2,385,674.5052
0.1743	0.0029	0.0043	0.0015	0.0033	0.0346	0.0101	2,350,350.7474
0.1699	0.0029	0.0043	0.0015	0.0032	0.0346	0.0101	2,318,677.6875
0.1668	0.0028	0.0043	0.0015	0.0032	0.0346	0.0101	2,370,925.0403
0.3114	0.0143	0.0048	0.0015	0.0162	0.0383	0.0102	38,263,243.5336
3.9063	0.2470	0.0048	0.0015	0.2792	0.0383	0.0102	1,776,633.0709
4.0071	0.2209	0.0048	0.0015	0.2497	0.0383	0.0102	394,629.7405
3.9605	0.2040	0.0048	0.0015	0.2306	0.0383	0.0102	379,913.8427
3.9720	0.2082	0.0048	0.0015	0.2353	0.0383	0.0102	537,863.9040
3.9617	0.1877	0.0048	0.0015	0.2122	0.0383	0.0102	505,298.7089
2.0562	0.1476	0.0048	0.0015	0.1668	0.0383	0.0102	555,104.9851
2.0310	0.1188	0.0048	0.0015	0.1343	0.0383	0.0102	691,178.6359
2.0242	0.1272	0.0048	0.0015	0.1438	0.0383	0.0102	599,285.1460
1.7537	0.0598	0.0048	0.0015	0.0676	0.0383	0.0102	485,752.8504
1.6513	0.0582	0.0048	0.0015	0.0658	0.0383	0.0102	556,500.6103
1.2241	0.0566	0.0048	0.0015	0.0640	0.0384	0.0102	715,055.1952
0.8384	0.0413	0.0048	0.0015	0.0467	0.0383	0.0102	855,827.1587
0.8010	0.0400	0.0048	0.0015	0.0452	0.0383	0.0102	1,266,279.5228
0.7612	0.0385	0.0048	0.0015	0.0435	0.0383	0.0102	1,598,051.6544
0.6685	0.0348	0.0048	0.0015	0.0394	0.0383	0.0102	905,348.4663
0.5949	0.0316	0.0048	0.0015	0.0358	0.0383	0.0102	767,284.0702
0.4208	0.0216	0.0048	0.0015	0.0245	0.0383	0.0102	469,652.7221
0.3695	0.0195	0.0048	0.0015	0.0221	0.0383	0.0102	867,005.8080
0.3550	0.0190	0.0048	0.0015	0.0214	0.0383	0.0102	1,416,547.6218
0.3416	0.0184	0.0048	0.0015	0.0208	0.0383	0.0102	1,592,358.1958
0.3228	0.0179	0.0048	0.0015	0.0203	0.0383	0.0102	2,112,368.9607
0.2579	0.0144	0.0048	0.0015	0.0163	0.0383	0.0102	2,217,386.6400

42,199.3529	99,706.1444	5,396.3902	220.5860	77.5061	6,100.2418
35,382.3002	120,212.8669	3,612.2118	288.4431	101.3489	4,083.3498
37,172.9539	149,180.0705	4,523.9273	372.9656	131.0472	5,113.9859
42,546.9238	141,836.2025	5,628.2813	479.4640	168.4670	6,362.3742
51,213.1074	138,777.5178	5,227.8848	684.0129	240.3389	5,909.7582
61,363.6804	172,696.5354	6,577.4778	889.9052	312.6813	7,435.3802
76,876.1649	225,977.0204	8,706.4727	1,217.7114	427.8622	9,842.0659
80,719.8277	227,826.2474	9,094.2203	1,397.2871	490.9587	10,280.3899
71,083.1352	184,001.9124	7,492.2675	1,266.5463	445.0210	8,469.4859
87,384.5742	182,596.3226	6,340.6595	1,754.5920	616.5012	7,167.6642
99,522.3407	188,375.2018	6,724.9358	2,053.9170	721.6753	7,602.0778
141,148.7457	264,635.4015	9,544.7874	2,990.8118	1,050.8675	10,789.7253
171,512.4702	318,552.1647	11,606.4341	3,726.7582	1,309.4557	13,120.2520
125,182.9471	225,161.7282	8,477.2411	2,785.9095	978.8715	9,582.9179
89,626.5949	170,468.1278	5,466.8385	2,809.8920	987.2984	6,179.8723
79,599.0048	152,729.6531	4,838.8176	2,652.7241	932.0746	5,469.9390
89,964.6134	189,046.8013	5,081.0795	3,555.7576	1,249.3725	5,743.8080
123,926.9069	263,860.8681	6,209.5892	5,205.3391	1,828.9766	7,019.5123
114,683.2971	259,172.9396	4,613.4131	5,424.2492	1,905.8923	5,215.1352
111,419.8836	256,414.7167	4,691.7995	5,603.5179	1,968.8855	5,303.7512
93,295.3857	239,736.3876	3,935.4332	5,774.2184	2,028.8583	4,448.7280
90,810.4493	238,420.2860	3,974.3238	5,908.7589	2,076.1318	4,492.6967
87,815.8375	237,127.9549	4,007.2842	6,029.4999	2,118.5511	4,529.9537
89,691.9905	241,623.8813	4,114.7457	6,258.0999	2,198.8809	4,651.4355
2,006,791.4965	3,152,133.8895	144,818.8090	48,523.0982	15,476.3524	163,707.4248
194,926.5068	230,606.0147	14,579.2706	282.9887	90.4779	16,480.8364
40,036.0424	49,556.4634	2,731.8290	59.2827	18.9516	3,088.1336
39,065.1415	48,233.8398	2,484.9234	58.3712	18.5755	2,809.0318
55,189.2685	67,616.0668	3,543.3851	81.6033	26.1107	4,005.5441
51,938.5365	64,028.1600	3,033.6770	77.4631	24.6749	3,429.3610
50,057.9492	64,094.8730	4,599.9132	149.4124	47.6285	5,199.8720
62,296.1537	79,681.1863	4,661.2563	188.0599	60.0538	5,269.2138
55,006.9922	67,591.7238	4,248.0293	160.0624	51.1536	4,802.0913
32,454.0561	61,130.0250	2,084.1361	167.0941	53.4395	2,355.9676
31,447.0658	73,015.1100	2,573.0728	211.9507	67.7274	2,908.6735
32,431.8282	73,020.6010	3,378.3812	285.9613	91.5517	3,819.0207
35,074.2109	64,661.0410	3,187.1653	369.6562	117.8974	3,602.8629
48,881.3672	96,249.2526	4,807.7778	575.9596	183.9545	5,434.8490
56,827.6990	123,604.9271	6,248.0222	778.2910	247.8280	7,062.9442
32,383.7883	67,402.9778	3,511.8670	483.2503	153.6789	3,969.9194
29,109.8943	54,497.1979	2,898.7120	439.0989	140.0526	3,276.8010
19,168.1667	28,841.9752	1,483.5203	328.5097	104.7800	1,677.0142
37,645.5898	50,996.4449	2,694.4807	661.6007	211.0124	3,045.9228
61,310.1323	81,737.4262	4,363.8965	1,103.5202	351.9566	4,933.0691
68,704.9981	90,163.9727	4,863.7235	1,265.0574	403.4740	5,498.0995
90,869.6846	115,133.1940	6,398.8142	1,709.4034	545.1914	7,233.4061
131,213.7983	145,302.5576	8,114.1001	2,700.4781	861.2845	9,172.4147

1,764.6844	516.7101
2,307.5445	675.6639
2,983.7248	873.6524
3,835.7063	1,123.1181
5,472.0955	1,602.2653
7,119.2394	2,084.5527
9,741.6895	2,852.4284
11,178.2900	3,273.0777
10,132.3825	2,966.8232
14,036.7437	4,110.0315
16,431.3380	4,811.2020
23,926.4710	7,005.8270
29,814.0010	8,729.7520
22,287.3240	6,525.8510
22,479.1240	6,582.0240
21,221.7450	6,213.8610
28,446.0030	8,329.1880
41,642.7150	12,193.2420
43,394.0400	12,706.0100
44,828.1770	13,125.9680
46,193.6490	13,525.7870
47,270.1110	13,840.9470
48,235.9350	14,123.7450
50,064.8570	14,659.2610
388,184.5450	103,176.1770
2,263.9150	603.1892
474.2615	126.3444
466.9705	123.8374
652.8268	174.0723
619.7058	164.5000
1,195.2992	317.5255
1,504.4807	400.3612
1,280.4990	341.0251
1,336.7527	356.2644
1,695.6071	451.5169
2,287.6859	610.3479
2,957.2480	785.9858
4,607.6727	1,226.3703
6,226.3298	1,652.1982
3,866.0006	1,024.5320
3,512.8008	933.6906
2,628.0815	698.5371
5,292.8073	1,406.7562
8,828.1516	2,346.3904
10,120.4600	2,689.8366
13,675.2335	3,634.6316
21,603.8470	5,741.9240

1.31.2018	gasoline	Pass Truck	2018	747,915	3.1945	0.1688
1.31.2019	gasoline	Pass Truck	2019	1,273,470	2.9338	0.1353
1.31.2020	gasoline	Pass Truck	2020	676,031	2.7473	0.1236
1.31.2021	gasoline	Pass Truck	2021	718,091	2.4664	0.1045
1.31.2022	gasoline	Pass Truck	2022	761,611	2.3128	0.0947
1.31.2023	gasoline	Pass Truck	2023	800,882	1.7099	0.0721
1.31.2024	gasoline	Pass Truck	2024	833,272	1.6222	0.0662
1.31.2025	gasoline	Pass Truck	2025	868,021	1.5626	0.0615
1.31.2026	gasoline	Pass Truck	2026	911,882	1.5409	0.0606
1.32.32	gasoline	Light Truck	2.32	2,546,158	4.1003	0.2193
1.32.1996	gasoline	Light Truck	1996	14,792	34.9726	3.5816
1.32.1997	gasoline	Light Truck	1997	3,100	36.7528	3.5264
1.32.1998	gasoline	Light Truck	1998	3,054	33.1475	3.3448
1.32.1999	gasoline	Light Truck	1999	4,271	34.1045	3.4230
1.32.2000	gasoline	Light Truck	2000	4,057	34.8399	3.4831
1.32.2001	gasoline	Light Truck	2001	7,833	21.6733	1.8965
1.32.2002	gasoline	Light Truck	2002	9,849	19.9863	1.7663
1.32.2003	gasoline	Light Truck	2003	8,384	20.3978	1.8313
1.32.2004	gasoline	Light Truck	2004	8,749	16.4610	1.1371
1.32.2005	gasoline	Light Truck	2005	11,099	14.9007	0.8645
1.32.2006	gasoline	Light Truck	2006	14,973	14.5564	0.7184
1.32.2007	gasoline	Light Truck	2007	19,382	12.8267	0.5734
1.32.2008	gasoline	Light Truck	2008	30,194	11.8098	0.4913
1.32.2009	gasoline	Light Truck	2009	40,823	10.3663	0.3760
1.32.2010	gasoline	Light Truck	2010	25,344	9.3727	0.3418
1.32.2011	gasoline	Light Truck	2011	23,092	8.8759	0.3476
1.32.2012	gasoline	Light Truck	2012	17,279	7.3093	0.3059
1.32.2013	gasoline	Light Truck	2013	34,749	6.6860	0.2978
1.32.2014	gasoline	Light Truck	2014	57,954	6.5446	0.2906
1.32.2015	gasoline	Light Truck	2015	66,422	6.4126	0.2839
1.32.2016	gasoline	Light Truck	2016	89,747	6.2914	0.2777
1.32.2017	gasoline	Light Truck	2017	141,783	4.3465	0.2629
1.32.2018	gasoline	Light Truck	2018	188,230	3.4662	0.1884
1.32.2019	gasoline	Light Truck	2019	320,529	3.1507	0.1492
1.32.2020	gasoline	Light Truck	2020	169,840	2.9249	0.1351
1.32.2021	gasoline	Light Truck	2021	180,481	2.5768	0.1123
1.32.2022	gasoline	Light Truck	2022	191,517	2.4077	0.1008
1.32.2023	gasoline	Light Truck	2023	201,392	1.7974	0.0772
1.32.2024	gasoline	Light Truck	2024	209,546	1.7115	0.0715
1.32.2025	gasoline	Light Truck	2025	218,375	1.6513	0.0669
1.32.2026	gasoline	Light Truck	2026	229,318	1.6277	0.0659
1.42.42	gasoline	Transit Bus	2.42	1,645	10.0571	0.7225
1.42.1996	gasoline	Transit Bus	1996	3	144.9459	7.9735
1.42.1997	gasoline	Transit Bus	1997	3	144.5001	7.9633
1.42.1998	gasoline	Transit Bus	1998	4	34.7788	4.8870
1.42.1999	gasoline	Transit Bus	1999	4	34.3440	4.8770
1.42.2000	gasoline	Transit Bus	2000	4	33.9360	4.8677

0.2302	0.0117	0.0048	0.0015	0.0132	0.0383	0.0102	2,389,227.8540
0.2098	0.0096	0.0048	0.0015	0.0108	0.0383	0.0102	3,736,159.2934
0.1990	0.0080	0.0048	0.0015	0.0091	0.0383	0.0102	1,857,243.8650
0.1853	0.0060	0.0048	0.0015	0.0068	0.0383	0.0102	1,771,099.2939
0.1767	0.0059	0.0048	0.0015	0.0067	0.0383	0.0102	1,761,490.7976
0.1570	0.0039	0.0048	0.0015	0.0044	0.0383	0.0102	1,369,436.6968
0.1520	0.0039	0.0048	0.0015	0.0044	0.0383	0.0102	1,351,772.3962
0.1480	0.0038	0.0048	0.0015	0.0043	0.0383	0.0102	1,356,341.4604
0.1454	0.0038	0.0048	0.0015	0.0043	0.0383	0.0102	1,405,144.3660
0.3364	0.0151	0.0048	0.0016	0.0170	0.0386	0.0103	10,439,885.5175
4.2805	0.2544	0.0048	0.0016	0.2876	0.0386	0.0105	517,311.9822
4.3840	0.2330	0.0048	0.0016	0.2633	0.0386	0.0105	113,941.2507
4.2609	0.2055	0.0048	0.0015	0.2323	0.0386	0.0102	101,228.4184
4.2779	0.2029	0.0048	0.0015	0.2294	0.0386	0.0103	145,654.1467
4.2805	0.1904	0.0048	0.0016	0.2152	0.0386	0.0104	141,359.8620
2.2797	0.1493	0.0048	0.0016	0.1687	0.0386	0.0105	169,771.7754
2.2017	0.1209	0.0048	0.0016	0.1367	0.0386	0.0104	196,841.0239
2.1967	0.1277	0.0048	0.0016	0.1443	0.0386	0.0104	171,009.1786
1.9177	0.0645	0.0048	0.0016	0.0729	0.0386	0.0104	144,013.7682
1.7706	0.0626	0.0048	0.0016	0.0708	0.0386	0.0104	165,386.3163
1.3160	0.0612	0.0048	0.0016	0.0691	0.0386	0.0105	217,956.2081
0.9133	0.0442	0.0048	0.0016	0.0500	0.0386	0.0103	248,605.1476
0.8644	0.0429	0.0048	0.0016	0.0485	0.0386	0.0104	356,584.3279
0.8095	0.0409	0.0048	0.0015	0.0463	0.0386	0.0103	423,185.2818
0.7087	0.0368	0.0048	0.0015	0.0416	0.0386	0.0103	237,542.9083
0.6318	0.0336	0.0048	0.0016	0.0380	0.0386	0.0103	204,963.6557
0.4517	0.0229	0.0048	0.0016	0.0259	0.0386	0.0104	126,299.6116
0.3962	0.0206	0.0048	0.0016	0.0233	0.0386	0.0103	232,333.9107
0.3805	0.0200	0.0048	0.0016	0.0226	0.0386	0.0103	379,281.7737
0.3660	0.0194	0.0048	0.0016	0.0219	0.0386	0.0103	425,936.6224
0.3464	0.0188	0.0048	0.0016	0.0213	0.0386	0.0103	564,633.1473
0.2798	0.0151	0.0048	0.0016	0.0171	0.0386	0.0103	616,265.6325
0.2497	0.0124	0.0048	0.0016	0.0140	0.0386	0.0103	652,446.2856
0.2273	0.0102	0.0048	0.0016	0.0115	0.0386	0.0103	1,009,901.1756
0.2156	0.0087	0.0048	0.0016	0.0098	0.0386	0.0103	496,769.9160
0.2002	0.0066	0.0048	0.0016	0.0075	0.0386	0.0103	465,071.3816
0.1911	0.0065	0.0048	0.0016	0.0073	0.0386	0.0103	461,111.6530
0.1696	0.0042	0.0048	0.0016	0.0048	0.0386	0.0103	361,991.0872
0.1643	0.0042	0.0048	0.0016	0.0047	0.0386	0.0103	358,629.5803
0.1600	0.0041	0.0048	0.0016	0.0047	0.0386	0.0103	360,595.7025
0.1571	0.0041	0.0048	0.0016	0.0046	0.0386	0.0103	373,262.7858
0.2935	0.0321	0.0222	0.0044	0.0363	0.1777	0.0296	16,546.4958
3.5447	0.6197	0.0222	0.0044	0.7005	0.1774	0.0295	473.4138
3.5462	0.4616	0.0224	0.0045	0.5218	0.1793	0.0299	441.4442
2.2246	0.4288	0.0220	0.0044	0.4847	0.1757	0.0291	127.8084
2.2030	0.5777	0.0222	0.0044	0.6530	0.1774	0.0295	147.2288
2.1854	0.4526	0.0224	0.0045	0.5116	0.1793	0.0299	145.9165

126,255.6400	172,165.6460	8,736.7087	3,584.9105	1,143.3606	9,876.2363
172,252.3298	267,181.6911	12,214.5700	6,103.9886	1,946.8008	13,807.7149
83,552.1920	134,499.6736	5,437.3409	3,240.3511	1,033.4714	6,146.5347
75,041.5015	133,095.2370	4,342.7568	3,441.9644	1,097.7737	4,909.1760
72,149.8179	134,594.7253	4,528.3061	3,650.5431	1,164.3048	5,118.9280
57,732.4872	125,731.1793	3,126.3554	3,838.7836	1,224.3359	3,534.1211
55,161.6384	126,661.8574	3,208.3736	3,994.0386	1,273.8494	3,626.8443
53,370.6447	128,483.7910	3,301.8402	4,160.6143	1,326.9755	3,732.4998
55,236.3744	132,555.0579	3,432.6036	4,370.8287	1,394.0251	3,880.3212
558,379.8421	856,499.3176	38,364.2226	12,289.4747	3,952.5009	43,368.0726
52,978.7641	63,317.3748	3,763.4740	71.4258	23.2445	4,254.3449
10,932.6213	13,591.3837	722.2198	14.9704	4.8765	816.4188
10,214.5336	13,012.3441	627.4604	14.7321	4.6651	709.3001
14,618.9537	18,270.1208	866.6628	20.6115	6.6071	979.7025
14,132.3403	17,367.8817	772.4240	19.5879	6.3375	873.1705
14,855.6682	17,857.1357	1,169.2737	37.8328	12.3900	1,321.7821
17,395.8728	21,684.0536	1,190.8475	47.5425	15.3405	1,346.1687
15,353.3671	18,416.5967	1,070.5360	40.4731	13.0887	1,210.1676
9,948.2019	16,777.7903	564.2136	42.2388	13.6873	637.8042
9,595.1718	19,652.8076	694.9505	53.5818	17.3214	785.5923
10,756.0822	19,705.3985	915.6497	72.2976	23.4964	1,035.0778
11,114.4996	17,701.5168	856.8891	93.5488	30.0799	968.6537
14,835.4804	26,099.5732	1,295.6089	145.7558	47.0561	1,464.5951
15,348.2239	33,046.4491	1,670.9414	197.0064	63.0494	1,888.8834
8,663.7585	17,961.8393	933.3286	122.2897	38.9845	1,055.0622
8,026.2020	14,590.3605	776.0930	111.4585	35.8495	877.3188
5,285.1002	7,805.8342	395.9071	83.4018	26.8260	447.5453
10,349.6510	13,766.6096	715.0829	167.7220	53.9357	808.3510
16,841.9687	22,052.7345	1,156.6030	279.7225	89.9510	1,307.4594
18,854.9062	24,309.1134	1,287.2339	320.5953	103.0913	1,455.1287
24,920.3828	31,087.1716	1,691.4659	433.1800	139.2927	1,912.0801
37,271.6198	39,664.7705	2,142.5215	684.3362	220.0540	2,421.9733
35,470.1108	47,003.3662	2,333.1546	908.5165	292.1460	2,637.4626
47,832.0832	72,860.9774	3,274.6170	1,547.0793	497.4904	3,701.7276
22,942.1457	36,616.0281	1,472.3738	819.7553	263.6033	1,664.4196
20,272.4709	36,141.2093	1,192.9637	871.1203	280.1215	1,348.5618
19,305.3872	36,595.6034	1,243.6848	924.3854	297.2568	1,405.8992
15,540.8786	34,149.0930	854.2210	972.0478	312.5760	965.6378
14,984.3884	34,422.5441	876.0785	1,011.4064	325.2302	990.3462
14,617.4437	34,939.9503	901.4443	1,054.0169	338.9333	1,019.0192
15,121.5638	36,031.6855	936.2974	1,106.8354	355.9182	1,058.4181
1,188.7506	482.8703	52.8153	36.5543	7.3014	59.7040
26.0426	11.5776	2.0239	0.0724	0.0145	2.2879
24.3278	10.8335	1.4100	0.0685	0.0137	1.5940
17.9590	8.1750	1.5757	0.0807	0.0161	1.7813
20.9073	9.4441	2.4765	0.0951	0.0190	2.7995
20.9301	9.3966	1.9460	0.0964	0.0193	2.1998

28,679.2040	7,622.4420
48,831.9490	12,978.7330
25,922.7480	6,889.8400
27,535.6810	7,318.5120
29,204.4070	7,762.0760
30,710.2850	8,162.2740
31,952.2070	8,492.3670
33,284.8180	8,846.5470
34,966.6090	9,293.5490
98,315.7730	26,350.1302
571.4068	154.9636
119.7635	32.5104
117.8565	31.1010
164.8919	44.0476
156.7035	42.2504
302.6625	82.6006
380.3397	102.2703
323.7856	87.2588
337.9103	91.2493
428.6550	115.4766
578.3798	156.6434
748.3904	200.5339
1,166.0456	313.7093
1,576.0512	420.3322
978.3184	259.8981
891.6680	238.9983
667.2146	178.8407
1,341.7756	359.5739
2,237.7740	599.6768
2,564.7640	687.2789
3,465.4434	928.6215
5,474.6841	1,467.0357
7,268.1337	1,947.6465
12,376.6248	3,316.6228
6,558.0429	1,757.3619
6,968.9604	1,867.4843
7,395.0878	1,981.7195
7,776.3745	2,083.8508
8,091.2495	2,168.2096
8,432.1403	2,259.5644
8,854.6748	2,372.7992
292.4347	48.6764
0.5795	0.0965
0.5478	0.0913
0.6456	0.1071
0.7606	0.1267
0.7709	0.1285

1.42.2001	gasoline	Transit Bus	2001	5	28.3703	2.3617
1.42.2002	gasoline	Transit Bus	2002	6	28.0428	2.3532
1.42.2003	gasoline	Transit Bus	2003	7	27.7355	2.3453
1.42.2004	gasoline	Transit Bus	2004	8	27.4211	2.3372
1.42.2005	gasoline	Transit Bus	2005	10	27.1265	2.2400
1.42.2006	gasoline	Transit Bus	2006	13	26.8277	2.2319
1.42.2007	gasoline	Transit Bus	2007	16	26.5478	2.2276
1.42.2008	gasoline	Transit Bus	2008	23	13.6377	0.6496
1.42.2009	gasoline	Transit Bus	2009	30	13.3727	0.6489
1.42.2010	gasoline	Transit Bus	2010	38	13.0576	0.6483
1.42.2011	gasoline	Transit Bus	2011	49	12.7458	0.6477
1.42.2012	gasoline	Transit Bus	2012	53	12.4535	0.6471
1.42.2013	gasoline	Transit Bus	2013	59	12.1654	0.6465
1.42.2014	gasoline	Transit Bus	2014	64	11.9418	0.6445
1.42.2015	gasoline	Transit Bus	2015	70	11.7310	0.6439
1.42.2016	gasoline	Transit Bus	2016	76	11.5222	0.6434
1.42.2017	gasoline	Transit Bus	2017	81	11.3730	0.6429
1.42.2018	gasoline	Transit Bus	2018	87	11.1780	0.6424
1.42.2019	gasoline	Transit Bus	2019	93	10.0175	0.6410
1.42.2020	gasoline	Transit Bus	2020	99	9.8689	0.6406
1.42.2021	gasoline	Transit Bus	2021	107	6.1359	0.5393
1.42.2022	gasoline	Transit Bus	2022	113	6.0180	0.5389
1.42.2023	gasoline	Transit Bus	2023	118	5.1098	0.5377
1.42.2024	gasoline	Transit Bus	2024	124	5.0224	0.5374
1.42.2025	gasoline	Transit Bus	2025	133	4.9404	0.5371
1.42.2026	gasoline	Transit Bus	2026	142	4.8602	0.5368
1.43.43	gasoline	School Bus	3.43	435	30.2310	1.0643
1.43.1996	gasoline	School Bus	1996	15	107.1747	6.0395
1.43.1997	gasoline	School Bus	1997	3	107.1773	6.0395
1.43.1998	gasoline	School Bus	1998	4	47.6119	4.2341
1.43.1999	gasoline	School Bus	1999	4	47.6036	4.2341
1.43.2000	gasoline	School Bus	2000	5	47.5957	4.2340
1.43.2001	gasoline	School Bus	2001	6	39.9538	2.3094
1.43.2002	gasoline	School Bus	2002	6	39.9680	2.3094
1.43.2003	gasoline	School Bus	2003	7	39.9593	2.3094
1.43.2004	gasoline	School Bus	2004	8	39.9840	2.3094
1.43.2005	gasoline	School Bus	2005	8	39.9843	2.0316
1.43.2006	gasoline	School Bus	2006	9	39.9674	2.0210
1.43.2007	gasoline	School Bus	2007	10	39.9759	2.0210
1.43.2008	gasoline	School Bus	2008	11	30.1286	0.5493
1.43.2009	gasoline	School Bus	2009	12	30.1282	0.5477
1.43.2010	gasoline	School Bus	2010	13	29.8655	0.5478
1.43.2011	gasoline	School Bus	2011	14	29.6196	0.5480
1.43.2012	gasoline	School Bus	2012	15	29.3949	0.5478
1.43.2013	gasoline	School Bus	2013	15	29.1721	0.5478
1.43.2014	gasoline	School Bus	2014	16	29.1645	0.5470

1.4698	0.4697	0.0222	0.0044	0.5310	0.1775	0.0296	152.4879
1.4538	0.2870	0.0223	0.0045	0.3245	0.1788	0.0298	173.1171
1.4388	0.3608	0.0220	0.0044	0.4079	0.1761	0.0293	205.5522
1.4068	0.0563	0.0223	0.0045	0.0637	0.1788	0.0298	216.3500
1.2438	0.0561	0.0222	0.0044	0.0634	0.1774	0.0295	282.1199
1.1853	0.0558	0.0220	0.0044	0.0630	0.1761	0.0293	355.7669
1.0329	0.0420	0.0221	0.0044	0.0475	0.1765	0.0293	433.7202
0.4023	0.0418	0.0222	0.0044	0.0473	0.1774	0.0295	308.5892
0.3988	0.0416	0.0221	0.0044	0.0471	0.1766	0.0294	407.4286
0.3865	0.0410	0.0222	0.0044	0.0463	0.1774	0.0295	492.0509
0.3775	0.0404	0.0222	0.0044	0.0456	0.1778	0.0296	621.9991
0.3240	0.0301	0.0222	0.0044	0.0341	0.1778	0.0296	664.6005
0.3165	0.0297	0.0222	0.0044	0.0336	0.1778	0.0296	712.2897
0.3145	0.0296	0.0222	0.0044	0.0335	0.1778	0.0296	762.1759
0.3127	0.0295	0.0222	0.0044	0.0334	0.1778	0.0296	818.4759
0.3106	0.0294	0.0222	0.0044	0.0333	0.1778	0.0296	877.5281
0.2953	0.0242	0.0222	0.0044	0.0273	0.1778	0.0296	925.4349
0.2937	0.0241	0.0222	0.0044	0.0272	0.1778	0.0296	974.5824
0.2922	0.0215	0.0222	0.0044	0.0243	0.1778	0.0296	935.3856
0.2907	0.0215	0.0222	0.0044	0.0243	0.1778	0.0296	980.9110
0.1233	0.0192	0.0222	0.0044	0.0217	0.1778	0.0296	654.9219
0.1223	0.0191	0.0222	0.0044	0.0216	0.1778	0.0296	678.3682
0.1189	0.0122	0.0222	0.0044	0.0138	0.1778	0.0296	604.8238
0.1181	0.0121	0.0222	0.0044	0.0137	0.1778	0.0296	623.3177
0.1173	0.0121	0.0222	0.0044	0.0137	0.1778	0.0296	656.1755
0.1165	0.0121	0.0222	0.0044	0.0137	0.1778	0.0296	692.5109
0.7090	0.0627	0.0170	0.0027	0.0709	0.1357	0.0183	13,149.6200
3.6509	0.4297	0.0170	0.0028	0.4857	0.1358	0.0183	1,644.7164
3.6774	0.3141	0.0170	0.0028	0.3551	0.1360	0.0184	369.7354
2.7072	0.3178	0.0170	0.0027	0.3593	0.1358	0.0183	184.1976
2.7087	0.4062	0.0170	0.0028	0.4592	0.1358	0.0183	209.8477
2.7147	0.3301	0.0170	0.0027	0.3731	0.1357	0.0183	240.1896
1.9429	0.3503	0.0170	0.0028	0.3960	0.1358	0.0183	230.3288
1.9432	0.2003	0.0170	0.0027	0.2264	0.1357	0.0183	255.5724
1.9430	0.2604	0.0170	0.0027	0.2943	0.1357	0.0183	283.5920
1.9285	0.0562	0.0170	0.0028	0.0636	0.1359	0.0184	308.6235
1.5000	0.0562	0.0170	0.0028	0.0636	0.1359	0.0184	334.2762
1.3580	0.0562	0.0170	0.0028	0.0636	0.1358	0.0183	362.7209
1.1590	0.0426	0.0170	0.0028	0.0481	0.1358	0.0183	396.5195
0.5468	0.0426	0.0170	0.0027	0.0481	0.1357	0.0183	326.7600
0.5465	0.0426	0.0170	0.0028	0.0481	0.1360	0.0184	354.6456
0.5159	0.0411	0.0170	0.0027	0.0464	0.1357	0.0183	382.1114
0.4943	0.0396	0.0170	0.0027	0.0447	0.1356	0.0183	407.1661
0.4076	0.0288	0.0170	0.0027	0.0326	0.1356	0.0183	428.0174
0.3869	0.0277	0.0170	0.0027	0.0313	0.1356	0.0183	450.9433
0.3866	0.0276	0.0170	0.0027	0.0312	0.1356	0.0183	476.0150

12.6937	7.8998	2.5247	0.1192	0.0239	2.8540
14.5273	8.9746	1.7719	0.1380	0.0276	2.0030
17.3816	10.6630	2.6742	0.1631	0.0326	3.0230
18.4406	11.0993	0.4446	0.1763	0.0352	0.5026
23.2960	12.9361	0.5830	0.2307	0.0461	0.6591
29.5975	15.7186	0.7395	0.2919	0.0583	0.8360
36.3924	16.8748	0.6866	0.3604	0.0719	0.7762
14.6983	9.1024	0.9466	0.5017	0.1001	1.0700
19.7705	12.1492	1.2685	0.6724	0.1342	1.4340
24.4294	14.5645	1.5447	0.8357	0.1670	1.7461
31.6060	18.4233	1.9704	1.0847	0.2167	2.2274
34.5320	17.2916	1.6088	1.1862	0.2369	1.8186
37.8522	18.5289	1.7411	1.3014	0.2599	1.9682
41.1343	20.0696	1.8887	1.4186	0.2834	2.1350
44.9281	21.8181	2.0588	1.5508	0.3098	2.3274
49.0013	23.6522	2.2411	1.6928	0.3381	2.5334
52.3151	24.0300	1.9662	1.8086	0.3613	2.2226
56.0109	25.6049	2.1012	1.9379	0.3871	2.3753
59.8544	27.2805	2.0086	2.0754	0.4146	2.2706
63.6699	28.8924	2.1329	2.2092	0.4413	2.4111
57.5584	13.1659	2.0448	2.3724	0.4739	2.3115
60.7451	13.7836	2.1546	2.5055	0.5005	2.4357
63.6450	14.0793	1.4407	2.6309	0.5255	1.6286
66.6923	14.6572	1.5074	2.7585	0.5510	1.7040
71.3315	15.5802	1.6099	2.9521	0.5897	1.8198
76.4801	16.6035	1.7236	3.1670	0.6326	1.9484
462.9487	308.4052	27.2662	7.3759	1.1954	30.8225
92.6823	56.0267	6.5935	0.2605	0.0422	7.4535
20.8346	12.6861	1.0836	0.0586	0.0095	1.2250
16.3804	10.4735	1.2297	0.0657	0.0106	1.3901
18.6647	11.9407	1.7905	0.0748	0.0121	2.0240
21.3669	13.6998	1.6657	0.0856	0.0139	1.8830
13.3133	11.2006	2.0196	0.0979	0.0159	2.2830
14.7672	12.4256	1.2808	0.1085	0.0176	1.4479
16.3898	13.7897	1.8477	0.1204	0.0195	2.0887
17.8254	14.8857	0.4340	0.1311	0.0212	0.4906
16.9842	12.5405	0.4701	0.1420	0.0230	0.5314
18.3413	12.3245	0.5103	0.1540	0.0250	0.5769
20.0461	11.4956	0.4224	0.1684	0.0273	0.4775
5.9571	5.9300	0.4619	0.1840	0.0298	0.5221
6.4466	6.4328	0.5013	0.2002	0.0324	0.5667
7.0094	6.6008	0.5254	0.2170	0.0352	0.5940
7.5325	6.7945	0.5438	0.2330	0.0378	0.6148
7.9759	5.9353	0.4198	0.2468	0.0400	0.4745
8.4672	5.9803	0.4282	0.2620	0.0425	0.4841
8.9287	6.3102	0.4511	0.2767	0.0448	0.5099

0.9538	0.1590
1.1037	0.1837
1.3050	0.2172
1.4105	0.2348
1.8453	0.3073
2.3350	0.3886
2.8832	0.4791
4.0138	0.6676
5.3792	0.8947
6.6859	1.1135
8.6774	1.4444
9.4893	1.5795
10.4111	1.7330
11.3488	1.8891
12.4061	2.0651
13.5422	2.2542
14.4688	2.4084
15.5031	2.5806
16.6033	2.7637
17.6737	2.9419
18.9792	3.1592
20.0438	3.3364
21.0469	3.5034
22.0682	3.6734
23.6170	3.9312
25.3361	4.2173
59.0069	7.9697
2.0840	0.2815
0.4691	0.0634
0.5252	0.0709
0.5986	0.0809
0.6848	0.0925
0.7829	0.1058
0.8677	0.1172
0.9632	0.1300
1.0487	0.1417
1.1358	0.1534
1.2322	0.1664
1.3469	0.1820
1.4717	0.1988
1.6012	0.2163
1.7360	0.2344
1.8641	0.2518
1.9745	0.2667
2.0962	0.2831
2.2133	0.2989

1.43.2015	gasoline	School Bus	2015	17	29.1645	0.5470
1.43.2016	gasoline	School Bus	2016	18	29.1645	0.5470
1.43.2017	gasoline	School Bus	2017	19	29.3126	0.5468
1.43.2018	gasoline	School Bus	2018	20	29.2908	0.5442
1.43.2019	gasoline	School Bus	2019	20	24.8901	0.5388
1.43.2020	gasoline	School Bus	2020	21	24.8845	0.5381
1.43.2021	gasoline	School Bus	2021	22	19.5654	0.4421
1.43.2022	gasoline	School Bus	2022	22	19.5629	0.4415
1.43.2023	gasoline	School Bus	2023	23	15.5063	0.4369
1.43.2024	gasoline	School Bus	2024	23	15.5062	0.4369
1.43.2025	gasoline	School Bus	2025	24	15.5063	0.4369
1.43.2026	gasoline	School Bus	2026	25	15.5063	0.4369
1.51.51	gasoline	Garbage	1.51	133	32.0593	2.1859
1.51.1996	gasoline	Garbage	1996	0	363.3126	20.3662
1.51.1997	gasoline	Garbage	1997	0	393.0708	16.6017
1.51.1998	gasoline	Garbage	1998	13	167.6934	10.1651
1.51.1999	gasoline	Garbage	1999	8	136.8234	9.3831
1.51.2000	gasoline	Garbage	2000	0	74.4390	8.8974
1.51.2001	gasoline	Garbage	2001	1	55.0402	4.7636
1.51.2002	gasoline	Garbage	2002	1	51.6629	4.5384
1.51.2003	gasoline	Garbage	2003	1	49.1015	4.3676
1.51.2004	gasoline	Garbage	2004	1	47.0923	4.2337
1.51.2005	gasoline	Garbage	2005	1	45.4740	3.7407
1.51.2006	gasoline	Garbage	2006	1	44.1426	3.6725
1.51.2007	gasoline	Garbage	2007	0	43.0279	3.6279
1.51.2008	gasoline	Garbage	2008	2	16.6335	1.2673
1.51.2009	gasoline	Garbage	2009	1	12.2700	1.1183
1.51.2010	gasoline	Garbage	2010	1	11.8649	1.1065
1.51.2011	gasoline	Garbage	2011	2	11.3855	1.0878
1.51.2012	gasoline	Garbage	2012	2	10.8879	1.0602
1.51.2013	gasoline	Garbage	2013	3	10.5837	1.0491
1.51.2014	gasoline	Garbage	2014	3	10.3901	1.0332
1.51.2015	gasoline	Garbage	2015	4	10.2884	1.0254
1.51.2016	gasoline	Garbage	2016	5	10.2012	1.0186
1.51.2017	gasoline	Garbage	2017	5	10.0221	1.0041
1.51.2018	gasoline	Garbage	2018	6	6.4738	0.6146
1.51.2019	gasoline	Garbage	2019	6	5.4920	0.5036
1.51.2020	gasoline	Garbage	2020	8	4.5360	0.4004
1.51.2021	gasoline	Garbage	2021	9	1.9826	0.2662
1.51.2022	gasoline	Garbage	2022	9	1.5401	0.1784
1.51.2023	gasoline	Garbage	2023	10	1.4361	0.1726
1.51.2024	gasoline	Garbage	2024	10	1.4361	0.1726
1.51.2025	gasoline	Garbage	2025	10	1.4361	0.1726
1.51.2026	gasoline	Garbage	2026	10	1.4361	0.1726
1.52.52	gasoline	SU S-haul Truck	2.52	281,393	20.0553	0.7009
1.52.1996	gasoline	SU S-haul Truck	1996	218	437.7501	18.4787
1.52.1997	gasoline	SU S-haul Truck	1997	240	367.2211	15.7014

0.3866	0.0276	0.0170	0.0027	0.0312	0.1356	0.0183	503.5753
0.3861	0.0276	0.0170	0.0027	0.0312	0.1356	0.0183	531.5376
0.3658	0.0227	0.0170	0.0027	0.0257	0.1356	0.0183	553.5252
0.3647	0.0227	0.0170	0.0027	0.0257	0.1356	0.0183	573.2711
0.3644	0.0204	0.0170	0.0027	0.0230	0.1356	0.0183	505.1914
0.3639	0.0204	0.0170	0.0027	0.0230	0.1356	0.0183	520.5466
0.2129	0.0182	0.0170	0.0027	0.0206	0.1356	0.0183	424.9765
0.2126	0.0182	0.0170	0.0027	0.0206	0.1356	0.0183	434.5615
0.2004	0.0116	0.0170	0.0027	0.0131	0.1356	0.0183	350.5021
0.2004	0.0116	0.0170	0.0027	0.0131	0.1356	0.0183	355.4337
0.2004	0.0116	0.0170	0.0027	0.0131	0.1356	0.0183	368.4055
0.2004	0.0116	0.0170	0.0027	0.0131	0.1356	0.0183	382.1147
1.7175	0.1791	0.0119	0.0021	0.2025	0.0949	0.0141	4,256.2176
18.0901	1.5484	0.0114	0.0021	1.7503	0.0908	0.0139	65.4563
14.3899	1.0354	0.0203	0.0026	1.1705	0.1627	0.0175	149.2696
9.1774	0.8246	0.0144	0.0023	0.9322	0.1154	0.0151	2,181.1216
7.4966	0.9230	0.0144	0.0023	1.0434	0.1154	0.0151	1,112.1464
5.4093	0.7613	0.0114	0.0021	0.8606	0.0908	0.0139	10.5181
3.5021	0.7198	0.0114	0.0021	0.8137	0.0908	0.0139	32.8704
3.1950	0.4587	0.0114	0.0021	0.5185	0.0908	0.0139	33.7240
2.9620	0.5639	0.0114	0.0021	0.6374	0.0908	0.0139	33.2415
2.7584	0.1086	0.0114	0.0021	0.1227	0.0908	0.0139	44.7745
2.2727	0.1050	0.0114	0.0021	0.1187	0.0908	0.0139	28.3433
2.0131	0.1020	0.0114	0.0021	0.1153	0.0908	0.0139	35.9232
1.6705	0.0754	0.0114	0.0021	0.0852	0.0908	0.0139	19.8668
0.8056	0.0738	0.0114	0.0021	0.0834	0.0908	0.0139	36.1577
0.7546	0.0724	0.0114	0.0021	0.0818	0.0908	0.0139	9.0106
0.7024	0.0698	0.0114	0.0021	0.0789	0.0908	0.0139	13.5808
0.6500	0.0669	0.0114	0.0021	0.0756	0.0908	0.0139	23.8344
0.5295	0.0489	0.0114	0.0021	0.0553	0.0908	0.0139	26.9959
0.4995	0.0474	0.0114	0.0021	0.0536	0.0908	0.0139	30.9543
0.4849	0.0466	0.0114	0.0021	0.0527	0.0908	0.0139	35.3465
0.4744	0.0462	0.0114	0.0021	0.0522	0.0908	0.0139	40.5001
0.4645	0.0458	0.0114	0.0021	0.0518	0.0908	0.0139	46.2220
0.4301	0.0374	0.0114	0.0021	0.0423	0.0908	0.0139	50.8687
0.3059	0.0372	0.0114	0.0021	0.0420	0.0908	0.0139	36.6907
0.2660	0.0331	0.0114	0.0021	0.0374	0.0908	0.0139	34.6504
0.2310	0.0329	0.0114	0.0021	0.0372	0.0908	0.0139	35.4167
0.1088	0.0293	0.0114	0.0021	0.0331	0.0908	0.0139	16.9609
0.0952	0.0292	0.0114	0.0021	0.0330	0.0908	0.0139	14.1114
0.0877	0.0186	0.0114	0.0021	0.0210	0.0908	0.0139	13.9963
0.0877	0.0186	0.0114	0.0021	0.0210	0.0908	0.0139	14.0868
0.0877	0.0186	0.0114	0.0021	0.0210	0.0908	0.0139	14.5332
0.0877	0.0186	0.0114	0.0021	0.0210	0.0908	0.0139	15.0447
0.5091	0.0314	0.0159	0.0022	0.0355	0.1276	0.0149	5,643,428.4682
23.5477	1.3372	0.0157	0.0022	1.5116	0.1253	0.0148	95,289.8960
18.9569	0.9257	0.0159	0.0022	1.0464	0.1268	0.0148	88,072.5909

9.4457	6.6755	0.4772	0.2927	0.0474	0.5394
9.9702	7.0371	0.5037	0.3089	0.0501	0.5694
10.3262	6.9083	0.4296	0.3201	0.0519	0.4856
10.6503	7.1382	0.4452	0.3317	0.0538	0.5033
10.9360	7.3956	0.4132	0.3440	0.0558	0.4670
11.2566	7.6125	0.4258	0.3546	0.0575	0.4813
9.6024	4.6243	0.3956	0.3682	0.0597	0.4472
9.8082	4.7222	0.4046	0.3765	0.0610	0.4574
9.8763	4.5288	0.2628	0.3831	0.0621	0.2970
10.0153	4.5925	0.2664	0.3885	0.0630	0.3012
10.3808	4.7601	0.2762	0.4027	0.0653	0.3122
10.7671	4.9373	0.2865	0.4177	0.0677	0.3238
290.2057	228.0097	23.7764	1.5753	0.2807	26.8776
3.6693	3.2592	0.2790	0.0020	0.0004	0.3153
6.3045	5.4646	0.3932	0.0077	0.0010	0.4445
132.2138	119.3670	10.7255	0.1876	0.0294	12.1244
76.2693	60.9349	7.5025	0.1172	0.0184	8.4810
1.2572	0.7643	0.1076	0.0016	0.0003	0.1216
2.8448	2.0915	0.4299	0.0068	0.0012	0.4859
2.9625	2.0856	0.2994	0.0074	0.0014	0.3385
2.9569	2.0053	0.3818	0.0077	0.0014	0.4315
4.0253	2.6226	0.1032	0.0108	0.0020	0.1167
2.3315	1.4165	0.0654	0.0071	0.0013	0.0740
2.9887	1.6383	0.0830	0.0092	0.0017	0.0938
1.6751	0.7713	0.0348	0.0052	0.0010	0.0393
2.7549	1.7511	0.1604	0.0247	0.0045	0.1813
0.8213	0.5542	0.0532	0.0083	0.0015	0.0601
1.2665	0.8040	0.0799	0.0130	0.0024	0.0904
2.2772	1.3607	0.1400	0.0238	0.0044	0.1583
2.6287	1.3129	0.1212	0.0281	0.0052	0.1370
3.0683	1.4610	0.1387	0.0332	0.0061	0.1568
3.5150	1.6495	0.1587	0.0386	0.0071	0.1793
4.0364	1.8676	0.1818	0.0447	0.0082	0.2055
4.6155	2.1047	0.2075	0.0514	0.0094	0.2346
5.0963	2.1832	0.1900	0.0576	0.0106	0.2147
3.4834	1.7335	0.2107	0.0643	0.0118	0.2382
3.1775	1.6780	0.2087	0.0716	0.0132	0.2359
3.1262	1.8038	0.2570	0.0886	0.0163	0.2905
2.2770	0.9306	0.2508	0.0971	0.0178	0.2835
1.6345	0.8718	0.2675	0.1040	0.0191	0.3023
1.6817	0.8550	0.1809	0.1106	0.0203	0.2045
1.6926	0.8605	0.1820	0.1113	0.0205	0.2058
1.7462	0.8877	0.1878	0.1149	0.0211	0.2123
1.8077	0.9190	0.1944	0.1189	0.0218	0.2198
197,223.4848	143,256.2998	8,830.9543	4,486.6813	626.8729	9,982.7702
4,022.4716	5,125.8964	291.0868	3.4106	0.4818	329.0523
3,765.7558	4,546.5365	222.0165	3.8025	0.5329	250.9733

2.3414	0.3162
2.4714	0.3338
2.5607	0.3458
2.6540	0.3584
2.7523	0.3717
2.8366	0.3831
2.9454	0.3978
3.0122	0.4068
3.0652	0.4140
3.1083	0.4198
3.2217	0.4351
3.3416	0.4513
12.6025	1.8712
0.0164	0.0025
0.0618	0.0066
1.5009	0.1958
0.9380	0.1224
0.0128	0.0020
0.0542	0.0083
0.0593	0.0091
0.0615	0.0094
0.0863	0.0132
0.0566	0.0087
0.0739	0.0113
0.0419	0.0064
0.1974	0.0302
0.0667	0.0102
0.1039	0.0159
0.1901	0.0291
0.2251	0.0345
0.2656	0.0407
0.3089	0.0473
0.3575	0.0547
0.4114	0.0630
0.4609	0.0706
0.5146	0.0788
0.5729	0.0877
0.7090	0.1085
0.7768	0.1189
0.8320	0.1274
0.8850	0.1355
0.8907	0.1364
0.9189	0.1407
0.9513	0.1456
35,893.4577	4,179.1737
27.2845	3.2120
30.4203	3.5530

1.52.1998	gasoline	SU S-haul Truck	1998	250	243.1706	11.6219
1.52.1999	gasoline	SU S-haul Truck	1999	421	212.3311	10.4683
1.52.2000	gasoline	SU S-haul Truck	2000	470	172.2310	9.6360
1.52.2001	gasoline	SU S-haul Truck	2001	582	132.6894	6.2940
1.52.2002	gasoline	SU S-haul Truck	2002	980	122.1572	5.8327
1.52.2003	gasoline	SU S-haul Truck	2003	1,095	111.3717	5.4619
1.52.2004	gasoline	SU S-haul Truck	2004	1,302	104.5836	5.1574
1.52.2005	gasoline	SU S-haul Truck	2005	1,096	92.9462	3.8075
1.52.2006	gasoline	SU S-haul Truck	2006	1,424	93.2866	3.6378
1.52.2007	gasoline	SU S-haul Truck	2007	1,258	82.2131	3.5264
1.52.2008	gasoline	SU S-haul Truck	2008	2,109	61.2862	1.1569
1.52.2009	gasoline	SU S-haul Truck	2009	2,643	50.8071	0.9770
1.52.2010	gasoline	SU S-haul Truck	2010	3,656	42.7555	0.9805
1.52.2011	gasoline	SU S-haul Truck	2011	4,379	42.6052	0.8881
1.52.2012	gasoline	SU S-haul Truck	2012	5,442	36.8798	0.8358
1.52.2013	gasoline	SU S-haul Truck	2013	6,667	32.6859	0.8086
1.52.2014	gasoline	SU S-haul Truck	2014	7,994	29.7350	0.7866
1.52.2015	gasoline	SU S-haul Truck	2015	9,486	27.3887	0.7697
1.52.2016	gasoline	SU S-haul Truck	2016	11,150	25.4672	0.7558
1.52.2017	gasoline	SU S-haul Truck	2017	12,716	23.8663	0.7358
1.52.2018	gasoline	SU S-haul Truck	2018	14,419	21.4433	0.6099
1.52.2019	gasoline	SU S-haul Truck	2019	16,268	17.4765	0.5640
1.52.2020	gasoline	SU S-haul Truck	2020	20,435	16.3695	0.5290
1.52.2021	gasoline	SU S-haul Truck	2021	22,549	11.2564	0.4119
1.52.2022	gasoline	SU S-haul Truck	2022	24,415	10.5904	0.3848
1.52.2023	gasoline	SU S-haul Truck	2023	26,120	8.2192	0.3756
1.52.2024	gasoline	SU S-haul Truck	2024	26,329	8.2192	0.3756
1.52.2025	gasoline	SU S-haul Truck	2025	27,192	8.2192	0.3756
1.52.2026	gasoline	SU S-haul Truck	2026	28,091	8.2192	0.3756
1.53.53	gasoline	SU L-haul Truck	3.53	166	97.4932	6.6142
1.53.1996	gasoline	SU L-haul Truck	1996	14	189.3288	9.1143
1.53.1997	gasoline	SU L-haul Truck	1997	19	128.4248	8.8516
1.53.1998	gasoline	SU L-haul Truck	1998	13	91.6438	6.6508
1.53.1999	gasoline	SU L-haul Truck	1999	37	76.4092	6.4655
1.53.2000	gasoline	SU L-haul Truck	2000	63	93.3049	6.3067
1.53.2001	gasoline	SU L-haul Truck	2001	19	55.4505	3.7514
1.53.2002	gasoline	SU L-haul Truck	2002	0	81.6427	3.6385
1.53.2004	gasoline	SU L-haul Truck	2004	0	74.6770	3.4502
1.54.54	gasoline	Motor Home	4.54	17,413	50.1868	2.5227
1.54.1996	gasoline	Motor Home	1996	3,001	127.6702	7.7849
1.54.1997	gasoline	Motor Home	1997	261	127.6697	7.7849
1.54.1998	gasoline	Motor Home	1998	323	62.1903	5.3282
1.54.1999	gasoline	Motor Home	1999	348	62.1905	5.3282
1.54.2000	gasoline	Motor Home	2000	401	62.1908	5.3282
1.54.2001	gasoline	Motor Home	2001	289	51.9026	2.8517
1.54.2002	gasoline	Motor Home	2002	356	51.9019	2.8517
1.54.2003	gasoline	Motor Home	2003	280	51.9021	2.8517

14.3870	0.7836	0.0164	0.0023	0.8859	0.1311	0.0150	60,870.2860
12.3836	0.7661	0.0156	0.0022	0.8660	0.1251	0.0147	89,320.5475
10.5234	0.6118	0.0151	0.0022	0.6916	0.1205	0.0145	80,986.9363
7.1572	0.5213	0.0156	0.0022	0.5893	0.1246	0.0147	77,169.2151
6.5028	0.3221	0.0168	0.0023	0.3641	0.1342	0.0152	119,655.9148
5.9302	0.3681	0.0163	0.0022	0.4162	0.1302	0.0150	121,936.0758
5.4767	0.1437	0.0171	0.0023	0.1624	0.1370	0.0153	136,188.2252
3.6754	0.1346	0.0163	0.0022	0.1521	0.1303	0.0150	101,885.2638
3.0134	0.1269	0.0170	0.0023	0.1434	0.1356	0.0152	132,816.9831
2.3668	0.0911	0.0163	0.0022	0.1029	0.1305	0.0150	103,438.7642
1.3410	0.0867	0.0164	0.0023	0.0980	0.1309	0.0150	129,246.9255
1.2494	0.0829	0.0158	0.0022	0.0937	0.1265	0.0148	134,275.6321
1.1114	0.0751	0.0148	0.0022	0.0849	0.1180	0.0144	156,296.6809
0.9128	0.0631	0.0159	0.0022	0.0713	0.1275	0.0149	186,557.8825
0.6671	0.0413	0.0159	0.0022	0.0467	0.1275	0.0149	200,706.9493
0.5757	0.0365	0.0159	0.0022	0.0412	0.1275	0.0149	217,910.6837
0.5362	0.0345	0.0159	0.0022	0.0390	0.1275	0.0149	237,715.5667
0.5049	0.0329	0.0159	0.0022	0.0372	0.1275	0.0149	259,799.0151
0.4780	0.0316	0.0159	0.0022	0.0358	0.1275	0.0149	283,965.9158
0.4260	0.0252	0.0159	0.0022	0.0285	0.1275	0.0149	303,476.8958
0.3748	0.0244	0.0159	0.0022	0.0276	0.1275	0.0149	309,188.1147
0.3483	0.0213	0.0159	0.0022	0.0241	0.1275	0.0149	284,302.5908
0.3280	0.0208	0.0159	0.0022	0.0235	0.1275	0.0149	334,503.2616
0.1826	0.0182	0.0159	0.0022	0.0206	0.1275	0.0149	253,815.3176
0.1723	0.0179	0.0159	0.0022	0.0202	0.1275	0.0149	258,564.3028
0.1559	0.0112	0.0159	0.0022	0.0127	0.1275	0.0149	214,681.8173
0.1559	0.0112	0.0159	0.0022	0.0127	0.1275	0.0149	216,404.3026
0.1559	0.0112	0.0159	0.0022	0.0127	0.1275	0.0149	223,498.3987
0.1559	0.0112	0.0159	0.0022	0.0127	0.1275	0.0149	230,887.5160
5.8635	0.4785	0.0156	0.0022	0.5409	0.1248	0.0148	16,146.5047
8.9113	0.6281	0.0177	0.0023	0.7101	0.1415	0.0155	2,741.3929
7.1405	0.4496	0.0135	0.0021	0.5082	0.1083	0.0141	2,455.5800
6.0531	0.4565	0.0173	0.0023	0.5160	0.1383	0.0154	1,165.5455
5.4337	0.5352	0.0138	0.0021	0.6050	0.1102	0.0141	2,836.4392
5.6526	0.4367	0.0170	0.0023	0.4937	0.1362	0.0153	5,891.1019
3.6738	0.4370	0.0138	0.0021	0.4940	0.1100	0.0141	1,053.6436
4.0592	0.2463	0.0383	0.0056	0.2784	0.3066	0.0375	0.5388
3.6371	0.0871	0.0383	0.0056	0.0985	0.3066	0.0375	2.2628
2.1026	0.1563	0.0174	0.0025	0.1767	0.1395	0.0163	873,903.0654
5.8044	0.5031	0.0174	0.0025	0.5688	0.1395	0.0163	383,167.9341
5.8208	0.3553	0.0174	0.0025	0.4016	0.1395	0.0163	33,353.3047
4.4849	0.3791	0.0174	0.0025	0.4285	0.1394	0.0163	20,064.2140
4.4630	0.4925	0.0174	0.0025	0.5567	0.1395	0.0163	21,651.9201
4.4707	0.4013	0.0174	0.0025	0.4536	0.1394	0.0163	24,911.3502
3.5260	0.4300	0.0174	0.0025	0.4861	0.1395	0.0163	14,993.9648
3.5258	0.2345	0.0174	0.0025	0.2651	0.1395	0.0163	18,463.8632
3.5257	0.3053	0.0174	0.0025	0.3451	0.1395	0.0163	14,535.5836

2,909.1847	3,601.3371	196.1603	4.1010	0.5635	221.7466
4,403.6613	5,209.3492	322.2588	6.5793	0.9300	364.2896
4,531.0567	4,948.3425	287.6884	7.0802	1.0262	325.2121
3,660.4556	4,162.4746	303.1874	9.0595	1.2850	342.7322
5,713.2214	6,369.6230	315.5029	16.4353	2.2260	356.6539
5,979.9707	6,492.7238	403.0665	17.8247	2.4587	455.6393
6,715.9891	7,131.6908	187.0914	22.3002	2.9838	211.4929
4,173.6491	4,028.8992	147.5180	17.8504	2.4632	166.7582
5,179.3236	4,290.3148	180.6118	24.1355	3.2476	204.1691
4,436.8118	2,977.8704	114.5585	20.5272	2.8296	129.5004
2,439.8986	2,827.9802	182.8255	34.5140	4.7463	206.6719
2,581.9838	3,302.0112	219.0152	41.7809	5.8705	247.5821
3,584.4162	4,062.6800	274.4402	53.9294	7.9173	310.2351
3,888.9658	3,996.9870	276.3384	69.8099	9.7541	312.3804
4,548.5747	3,630.5004	224.8819	86.7641	12.1230	254.2130
5,391.1046	3,838.0144	243.1737	106.2879	14.8510	274.8908
6,288.7865	4,286.7247	275.6899	127.4547	17.8085	311.6480
7,301.1070	4,789.7562	312.2985	151.2277	21.1302	353.0307
8,427.7161	5,329.3617	352.8425	177.7667	24.8383	398.8635
9,356.4282	5,416.6388	320.0680	202.7245	28.3256	361.8149
8,793.8157	5,403.8428	352.2178	229.8777	32.1195	398.1574
9,175.5940	5,666.8304	346.2866	259.3539	36.2381	391.4522
10,810.7944	6,701.8031	424.8763	325.7858	45.5202	480.2933
9,286.9085	4,116.6117	410.7589	359.4884	50.2292	464.3335
9,394.1448	4,206.3711	436.4076	389.2433	54.3868	493.3280
9,809.8854	4,071.9636	292.8991	416.4229	58.1844	331.1014
9,888.6115	4,104.6361	295.2497	419.7639	58.6511	333.7583
10,212.7825	4,239.1865	304.9279	433.5235	60.5739	344.7000
10,550.4150	4,379.3414	315.0092	447.8558	62.5764	356.0958
1,095.4224	971.0940	79.2472	2.5837	0.3671	89.5834
131.9712	129.0317	9.0953	0.2561	0.0336	10.2816
169.2499	136.5310	8.5964	0.2589	0.0404	9.7177
84.5858	76.9849	5.8057	0.2198	0.0294	6.5630
240.0098	201.7068	19.8670	0.5112	0.0787	22.4582
398.1940	356.8948	27.5755	1.0750	0.1445	31.1722
71.2831	69.8077	8.3029	0.2613	0.0403	9.3859
0.0240	0.0268	0.0016	0.0003	0.0000	0.0018
0.1045	0.1102	0.0026	0.0012	0.0002	0.0030
43,928.0485	36,612.9238	2,722.2253	303.5342	42.6787	3,077.2851
23,364.3605	17,420.2242	1,510.0350	52.3169	7.3561	1,706.9896
2,033.7833	1,520.6709	92.8099	4.5540	0.6403	104.9150
1,719.0277	1,446.9507	122.3046	5.6237	0.7907	138.2568
1,855.0520	1,553.8248	171.4567	6.0688	0.8533	193.8193
2,134.2944	1,790.7837	160.7426	6.9822	0.9817	181.7084
823.8083	1,018.6173	124.2154	5.0358	0.7081	140.4165
1,014.4648	1,254.2874	83.4158	6.2012	0.8719	94.2957
798.6289	987.4110	85.4988	4.8818	0.6864	96.6504

32.8077	3.7570
52.6348	6.1999
56.6412	6.8413
72.4758	8.5670
131.4820	14.8399
142.5977	16.3917
178.4011	19.8922
142.8033	16.4217
193.0841	21.6507
164.2181	18.8643
276.1113	31.6425
334.2464	39.1367
431.4354	52.7822
558.4799	65.0280
694.1120	80.8208
850.3038	99.0073
1,019.6375	118.7241
1,209.8218	140.8685
1,422.1333	165.5897
1,621.7954	188.8379
1,839.0187	214.1307
2,074.8324	241.5881
2,606.2910	303.4691
2,875.9108	334.8638
3,113.9489	362.5806
3,331.3751	387.8971
3,358.1085	391.0096
3,468.1925	403.8280
3,582.8525	417.1785
20.6693	2.4474
2.0488	0.2239
2.0710	0.2692
1.7583	0.1957
4.0894	0.5250
8.5997	0.9635
2.0907	0.2686
0.0020	0.0002
0.0093	0.0011
2,428.2736	284.5263
418.5363	49.0408
36.4320	4.2688
44.9899	5.2716
48.5504	5.6888
55.8579	6.5450
40.2863	4.7205
49.6097	5.8129
39.0546	4.5762

1.54.2004	gasoline	Motor Home	2004	445	51.9021	2.8517
1.54.2005	gasoline	Motor Home	2005	504	51.9026	2.5425
1.54.2006	gasoline	Motor Home	2006	291	51.9025	2.5315
1.54.2007	gasoline	Motor Home	2007	400	51.9025	2.5315
1.54.2008	gasoline	Motor Home	2008	359	35.9286	0.7638
1.54.2009	gasoline	Motor Home	2009	511	34.4107	0.7259
1.54.2010	gasoline	Motor Home	2010	348	34.1058	0.7259
1.54.2011	gasoline	Motor Home	2011	574	33.8018	0.7259
1.54.2012	gasoline	Motor Home	2012	351	33.4375	0.7208
1.54.2013	gasoline	Motor Home	2013	323	33.1333	0.7208
1.54.2014	gasoline	Motor Home	2014	79	33.1014	0.7184
1.54.2015	gasoline	Motor Home	2015	138	33.1014	0.7184
1.54.2016	gasoline	Motor Home	2016	291	33.1013	0.7184
1.54.2017	gasoline	Motor Home	2017	188	33.1773	0.7132
1.54.2018	gasoline	Motor Home	2018	404	32.4530	0.6370
1.54.2019	gasoline	Motor Home	2019	230	27.6451	0.6090
1.54.2020	gasoline	Motor Home	2020	932	27.4568	0.5894
1.54.2021	gasoline	Motor Home	2021	947	21.1820	0.4742
1.54.2022	gasoline	Motor Home	2022	950	21.1031	0.4585
1.54.2023	gasoline	Motor Home	2023	952	16.7666	0.4510
1.54.2024	gasoline	Motor Home	2024	951	16.7666	0.4510
1.54.2025	gasoline	Motor Home	2025	976	16.7667	0.4510
1.54.2026	gasoline	Motor Home	2026	1,009	16.7666	0.4510
1.61.61	gasoline	Comb S-haul Truck	1.61	0	75.7417	4.7698
1.61.1997	gasoline	Comb S-haul Truck	1997	0	331.2794	15.2260
1.61.1999	gasoline	Comb S-haul Truck	1999	0	118.2248	9.0202
1.61.2000	gasoline	Comb S-haul Truck	2000	0	106.1208	8.7010
1.61.2001	gasoline	Comb S-haul Truck	2001	0	81.6347	4.6532
1.61.2002	gasoline	Comb S-haul Truck	2002	0	75.8467	4.4811
1.61.2004	gasoline	Comb S-haul Truck	2004	0	67.4845	4.2325
2.61.2	diesel	Comb S-haul Truck	61.2	3,966,674	1.1623	1.6024
2.21.21	diesel	Pass Car	1.21	113,690	2.4990	0.1411
2.21.1996	diesel	Pass Car	1996	982	13.5509	2.5681
2.21.1997	diesel	Pass Car	1997	64	13.5509	2.5681
2.21.1998	diesel	Pass Car	1998	78	13.5022	2.5575
2.21.1999	diesel	Pass Car	1999	123	13.4217	2.5400
2.21.2000	diesel	Pass Car	2000	160	13.3144	2.5167
2.21.2001	diesel	Pass Car	2001	213	9.4925	1.3467
2.21.2002	diesel	Pass Car	2002	286	9.0544	1.2681
2.21.2003	diesel	Pass Car	2003	354	8.9234	1.1605
2.21.2004	diesel	Pass Car	2004	462	8.2545	0.6835
2.21.2005	diesel	Pass Car	2005	598	7.7294	0.5285
2.21.2006	diesel	Pass Car	2006	769	7.4037	0.4951
2.21.2007	diesel	Pass Car	2007	1,098	6.2744	0.3539
2.21.2008	diesel	Pass Car	2008	1,434	6.1194	0.3231
2.21.2009	diesel	Pass Car	2009	1,959	5.9670	0.2924
2.21.2010	diesel	Pass Car	2010	2,253	5.8258	0.2640

3.5081	0.0676	0.0174	0.0025	0.0764	0.1394	0.0163	23,096.5900
2.9741	0.0676	0.0174	0.0025	0.0764	0.1395	0.0163	26,165.6281
2.7613	0.0676	0.0174	0.0025	0.0764	0.1395	0.0163	15,115.9442
1.7660	0.0512	0.0174	0.0025	0.0579	0.1395	0.0163	20,735.7370
1.0631	0.0512	0.0174	0.0025	0.0579	0.1394	0.0163	12,901.2288
1.0547	0.0512	0.0174	0.0025	0.0579	0.1395	0.0163	17,582.3068
1.0168	0.0493	0.0174	0.0025	0.0557	0.1395	0.0163	11,880.8595
0.9902	0.0474	0.0174	0.0025	0.0535	0.1395	0.0163	19,414.1764
0.6445	0.0344	0.0174	0.0025	0.0389	0.1395	0.0163	11,728.4104
0.6184	0.0330	0.0174	0.0025	0.0373	0.1395	0.0163	10,714.9889
0.6172	0.0329	0.0174	0.0025	0.0372	0.1395	0.0163	2,612.0294
0.6172	0.0329	0.0174	0.0025	0.0372	0.1395	0.0163	4,561.8487
0.6120	0.0329	0.0174	0.0025	0.0372	0.1395	0.0163	9,629.8720
0.5054	0.0271	0.0174	0.0025	0.0306	0.1395	0.0163	6,240.0250
0.4795	0.0271	0.0174	0.0025	0.0306	0.1395	0.0163	13,126.5420
0.4696	0.0242	0.0174	0.0025	0.0274	0.1395	0.0163	6,366.4625
0.4613	0.0242	0.0174	0.0025	0.0274	0.1395	0.0163	25,585.5430
0.2993	0.0217	0.0174	0.0025	0.0245	0.1395	0.0163	20,065.3725
0.2948	0.0217	0.0174	0.0025	0.0245	0.1395	0.0163	20,043.8511
0.2772	0.0138	0.0174	0.0025	0.0156	0.1395	0.0163	15,957.5753
0.2772	0.0138	0.0174	0.0025	0.0156	0.1395	0.0163	15,953.1518
0.2772	0.0138	0.0174	0.0025	0.0156	0.1395	0.0163	16,362.9837
0.2772	0.0138	0.0174	0.0025	0.0156	0.1395	0.0163	16,919.8035
3.6215	0.3216	0.0346	0.0056	0.3635	0.2767	0.0375	14.3750
11.0195	0.9334	0.0346	0.0056	1.0551	0.2767	0.0375	0.2069
6.5744	0.8548	0.0346	0.0056	0.9663	0.2767	0.0375	0.3334
5.9187	0.7128	0.0346	0.0056	0.8058	0.2767	0.0375	1.4118
3.8986	0.6725	0.0346	0.0056	0.7602	0.2767	0.0375	3.1326
3.6007	0.4434	0.0346	0.0056	0.5012	0.2767	0.0375	1.8349
3.1360	0.1088	0.0346	0.0056	0.1230	0.2767	0.0375	7.4555
0.2053	0.0457	0.0178	0.0033	0.0496	0.1427	0.0218	4,610,579.2611
0.2303	0.0048	0.0043	0.0015	0.0052	0.0346	0.0101	284,109.6070
2.4436	0.0317	0.0043	0.0015	0.0345	0.0346	0.0101	13,301.6119
2.4436	0.0352	0.0043	0.0015	0.0382	0.0346	0.0101	861.8146
2.4244	0.0308	0.0043	0.0015	0.0335	0.0346	0.0101	1,050.4553
2.3928	0.0271	0.0043	0.0015	0.0295	0.0346	0.0101	1,645.5939
2.3506	0.0283	0.0043	0.0015	0.0308	0.0346	0.0101	2,125.3637
1.3599	0.0189	0.0043	0.0015	0.0205	0.0346	0.0101	2,018.3834
1.2676	0.0174	0.0043	0.0015	0.0189	0.0346	0.0101	2,587.7875
1.1848	0.0158	0.0043	0.0015	0.0172	0.0346	0.0101	3,159.8288
1.0158	0.0157	0.0043	0.0015	0.0171	0.0346	0.0101	3,816.3114
0.9561	0.0155	0.0043	0.0015	0.0169	0.0346	0.0101	4,621.4066
0.8698	0.0154	0.0043	0.0015	0.0167	0.0346	0.0101	5,696.1754
0.4003	0.0121	0.0043	0.0015	0.0131	0.0346	0.0101	6,890.4653
0.3802	0.0119	0.0043	0.0015	0.0130	0.0346	0.0101	8,773.4868
0.3606	0.0118	0.0043	0.0015	0.0128	0.0346	0.0101	11,688.3668
0.3426	0.0117	0.0043	0.0015	0.0127	0.0346	0.0101	13,125.5377

1,268.9973	1,561.0950	30.0712	7.7569	1.0907	33.9935
1,281.7692	1,499.3392	34.0669	8.7877	1.2356	38.5102
737.2766	804.1910	19.6805	5.0766	0.7138	22.2475
1,011.3796	705.5544	20.4458	6.9642	0.9792	23.1125
274.2565	381.7330	18.3765	6.2592	0.8801	20.7733
370.9062	538.9101	26.1490	8.9066	1.2523	29.5597
252.8731	354.1935	17.1596	6.0723	0.8538	19.3977
416.9293	568.7061	27.1964	10.0118	1.4077	30.7435
252.8411	226.0550	12.0742	6.1142	0.8597	13.6490
233.1143	199.9971	10.6701	5.6371	0.7926	12.0618
56.6911	48.7045	2.5962	1.3755	0.1934	2.9348
99.0099	85.0612	4.5341	2.4023	0.3378	5.1255
209.0058	178.0488	9.5714	5.0712	0.7130	10.8198
134.1348	95.0607	5.0938	3.2785	0.4610	5.7582
257.6428	193.9383	10.9545	7.0506	0.9914	12.3833
140.2566	108.1416	5.5808	4.0143	0.5644	6.3087
549.2028	429.8628	22.5817	16.2434	2.2839	25.5271
449.2241	283.5141	20.5402	16.5124	2.3217	23.2193
435.5081	280.0250	20.5950	16.5564	2.3279	23.2812
429.2349	263.8701	13.1709	16.5902	2.3327	14.8887
429.1163	263.7968	13.1672	16.5857	2.3320	14.8846
440.1396	270.5739	13.5054	17.0117	2.3920	15.2670
455.1187	279.7818	13.9651	17.5907	2.4734	15.7865
0.9053	0.6873	0.0610	0.0066	0.0011	0.0690
0.0095	0.0069	0.0006	0.0000	0.0000	0.0007
0.0254	0.0185	0.0024	0.0001	0.0000	0.0027
0.1158	0.0787	0.0095	0.0005	0.0001	0.0107
0.1786	0.1496	0.0258	0.0013	0.0002	0.0292
0.1084	0.0871	0.0107	0.0008	0.0001	0.0121
0.4676	0.3465	0.0120	0.0038	0.0006	0.0136
6,356,315.8874	814,384.0507	181,104.9523	70,756.7234	12,986.5643	196,853.8203
16,042.9479	26,186.2302	548.5322	491.0203	172.5275	596.2324
2,520.8203	2,398.6019	31.1253	4.2395	1.4896	33.8319
163.3246	155.4061	2.2357	0.2747	0.0965	2.4301
198.9682	188.6153	2.3944	0.3360	0.1181	2.6026
311.4189	293.3684	3.3257	0.5295	0.1861	3.6149
401.7307	375.2196	4.5164	0.6894	0.2422	4.9091
286.3578	289.1644	4.0118	0.9183	0.3227	4.3607
362.4351	362.2972	4.9701	1.2344	0.4337	5.4023
410.9369	419.5526	5.6126	1.5294	0.5374	6.1006
316.0098	469.6426	7.2753	1.9968	0.7016	7.9080
315.9733	571.6647	9.2949	2.5823	0.9073	10.1032
380.9041	669.1801	11.8149	3.3228	1.1675	12.8423
388.6229	439.5580	13.2393	4.7430	1.6665	14.3906
463.1826	545.0704	17.0822	6.1922	2.1757	18.5677
572.6798	706.3792	23.0740	8.4601	2.9726	25.0805
594.8670	771.8127	26.2493	9.7306	3.4190	28.5319

62.0551	7.2712
70.3017	8.2374
40.6132	4.7587
55.7132	6.5281
50.0736	5.8672
71.2528	8.3488
48.5788	5.6921
80.0940	9.3848
48.9133	5.7313
45.0971	5.2841
11.0041	1.2894
19.2184	2.2519
40.5691	4.7536
26.2281	3.0732
56.4050	6.6091
32.1146	3.7629
129.9469	15.2262
132.0994	15.4784
132.4516	15.5196
132.7221	15.5513
132.6853	15.5470
136.0938	15.9464
140.7253	16.4891
0.0525	0.0071
0.0002	0.0000
0.0008	0.0001
0.0037	0.0005
0.0106	0.0014
0.0067	0.0009
0.0306	0.0041
566,053.7791	86,577.5439
3,928.1616	1,150.1888
33.9157	9.9307
2.1974	0.6434
2.6881	0.7871
4.2363	1.2404
5.5154	1.6149
7.3467	2.1512
9.8750	2.8915
12.2349	3.5824
15.9742	4.6773
20.6584	6.0489
26.5828	7.7836
37.9439	11.1102
49.5373	14.5048
67.6808	19.8174
77.8449	22.7934

2.21.2011	diesel	Pass Car	2011	2,052	5.7376	0.2593
2.21.2012	diesel	Pass Car	2012	2,856	5.0921	0.2250
2.21.2013	diesel	Pass Car	2013	3,309	5.0182	0.2213
2.21.2014	diesel	Pass Car	2014	4,819	4.9491	0.2178
2.21.2015	diesel	Pass Car	2015	6,004	4.8849	0.2146
2.21.2016	diesel	Pass Car	2016	4,489	4.8253	0.2116
2.21.2017	diesel	Pass Car	2017	4,527	2.0281	0.0931
2.21.2018	diesel	Pass Car	2018	4,275	1.9050	0.0860
2.21.2019	diesel	Pass Car	2019	5,732	1.7452	0.0658
2.21.2020	diesel	Pass Car	2020	8,389	1.6324	0.0602
2.21.2021	diesel	Pass Car	2021	8,742	1.3118	0.0447
2.21.2022	diesel	Pass Car	2022	9,034	1.2203	0.0404
2.21.2023	diesel	Pass Car	2023	9,306	0.6144	0.0222
2.21.2024	diesel	Pass Car	2024	9,522	0.5733	0.0199
2.21.2025	diesel	Pass Car	2025	9,717	0.5212	0.0171
2.21.2026	diesel	Pass Car	2026	10,085	0.5182	0.0169
2.31.31	diesel	Pass Truck	1.31	1,362,393	1.3427	0.7105
2.31.1996	diesel	Pass Truck	1996	7,540	12.7751	6.6259
2.31.1997	diesel	Pass Truck	1997	1,580	18.9393	5.4330
2.31.1998	diesel	Pass Truck	1998	1,565	16.0100	5.3174
2.31.1999	diesel	Pass Truck	1999	2,198	15.5183	5.3930
2.31.2000	diesel	Pass Truck	2000	2,094	16.8421	5.1895
2.31.2001	diesel	Pass Truck	2001	4,039	12.8691	4.3102
2.31.2002	diesel	Pass Truck	2002	5,106	9.7410	5.3551
2.31.2003	diesel	Pass Truck	2003	4,347	8.8126	3.8136
2.31.2004	diesel	Pass Truck	2004	4,517	6.6622	3.3357
2.31.2005	diesel	Pass Truck	2005	5,740	5.6608	3.4100
2.31.2006	diesel	Pass Truck	2006	7,723	5.0518	3.5331
2.31.2007	diesel	Pass Truck	2007	10,198	3.1884	2.0859
2.31.2008	diesel	Pass Truck	2008	15,793	2.8719	2.1398
2.31.2009	diesel	Pass Truck	2009	21,737	3.8121	1.7368
2.31.2010	diesel	Pass Truck	2010	13,589	3.7669	0.9035
2.31.2011	diesel	Pass Truck	2011	12,602	2.6491	1.0581
2.31.2012	diesel	Pass Truck	2012	9,450	2.2590	1.0322
2.31.2013	diesel	Pass Truck	2013	18,674	2.2283	1.0217
2.31.2014	diesel	Pass Truck	2014	31,103	2.1996	1.0118
2.31.2015	diesel	Pass Truck	2015	35,551	2.1729	1.0027
2.31.2016	diesel	Pass Truck	2016	48,003	2.1483	0.9942
2.31.2017	diesel	Pass Truck	2017	75,841	1.2928	0.9456
2.31.2018	diesel	Pass Truck	2018	100,769	1.0416	0.6835
2.31.2019	diesel	Pass Truck	2019	171,799	0.9708	0.6061
2.31.2020	diesel	Pass Truck	2020	91,085	0.9168	0.5364
2.31.2021	diesel	Pass Truck	2021	96,803	0.7871	0.3824
2.31.2022	diesel	Pass Truck	2022	102,838	0.7427	0.3019
2.31.2023	diesel	Pass Truck	2023	107,972	0.4730	0.2910
2.31.2024	diesel	Pass Truck	2024	112,272	0.4495	0.2870
2.31.2025	diesel	Pass Truck	2025	116,968	0.4285	0.2835

0.3294	0.0115	0.0043	0.0015	0.0125	0.0346	0.0101	11,776.0404
0.3040	0.0077	0.0043	0.0015	0.0084	0.0346	0.0101	14,543.5367
0.2927	0.0076	0.0043	0.0015	0.0083	0.0346	0.0101	16,606.4419
0.2823	0.0075	0.0043	0.0015	0.0082	0.0346	0.0101	23,847.4682
0.2725	0.0075	0.0043	0.0015	0.0081	0.0346	0.0101	29,331.1793
0.2635	0.0074	0.0043	0.0015	0.0081	0.0346	0.0101	21,659.0469
0.1835	0.0048	0.0043	0.0015	0.0052	0.0346	0.0101	9,182.3183
0.1745	0.0046	0.0043	0.0015	0.0050	0.0346	0.0101	8,143.6145
0.1604	0.0036	0.0043	0.0015	0.0040	0.0346	0.0101	10,003.3670
0.1533	0.0031	0.0043	0.0015	0.0033	0.0346	0.0101	13,693.8381
0.1409	0.0022	0.0043	0.0015	0.0024	0.0346	0.0101	11,468.4555
0.1354	0.0022	0.0043	0.0015	0.0024	0.0346	0.0101	11,024.8540
0.1245	0.0018	0.0043	0.0015	0.0020	0.0346	0.0101	5,718.1297
0.1207	0.0018	0.0043	0.0015	0.0020	0.0346	0.0101	5,458.9328
0.1169	0.0018	0.0043	0.0015	0.0020	0.0346	0.0101	5,063.7914
0.1147	0.0018	0.0043	0.0015	0.0019	0.0346	0.0101	5,226.0034
0.2192	0.0191	0.0048	0.0019	0.0207	0.0387	0.0127	1,829,312.7082
2.7093	0.5704	0.0048	0.0019	0.6199	0.0386	0.0124	96,330.6978
3.3446	0.3481	0.0048	0.0017	0.3783	0.0385	0.0115	29,917.3523
3.0222	0.2090	0.0048	0.0018	0.2272	0.0386	0.0120	25,053.0746
2.9681	0.2184	0.0048	0.0018	0.2374	0.0386	0.0121	34,108.9785
3.1136	0.1933	0.0048	0.0018	0.2101	0.0386	0.0119	35,269.9368
1.7842	0.1475	0.0048	0.0018	0.1603	0.0385	0.0117	51,977.1941
1.7789	0.2209	0.0048	0.0019	0.2401	0.0386	0.0126	49,738.2555
1.4676	0.1862	0.0048	0.0019	0.2024	0.0386	0.0126	38,312.1429
1.2410	0.1860	0.0048	0.0019	0.2022	0.0386	0.0126	30,091.3384
1.1959	0.2013	0.0048	0.0019	0.2189	0.0387	0.0128	32,496.0241
1.1758	0.2161	0.0048	0.0020	0.2349	0.0387	0.0130	39,013.1533
0.3142	0.0169	0.0048	0.0019	0.0183	0.0386	0.0126	32,514.0815
0.2989	0.0169	0.0048	0.0019	0.0184	0.0387	0.0128	45,356.8563
0.3034	0.0163	0.0048	0.0018	0.0177	0.0386	0.0122	82,863.5366
0.2804	0.0146	0.0048	0.0018	0.0159	0.0386	0.0121	51,188.7964
0.2505	0.0147	0.0048	0.0019	0.0160	0.0387	0.0127	33,383.6565
0.2347	0.0135	0.0048	0.0019	0.0147	0.0387	0.0127	21,346.9366
0.2258	0.0135	0.0048	0.0019	0.0146	0.0387	0.0127	41,611.3417
0.2175	0.0134	0.0048	0.0019	0.0146	0.0387	0.0127	68,413.8267
0.2098	0.0134	0.0048	0.0019	0.0145	0.0387	0.0127	77,249.1587
0.2027	0.0133	0.0048	0.0019	0.0145	0.0387	0.0127	103,124.7070
0.1781	0.0127	0.0048	0.0019	0.0138	0.0387	0.0127	98,045.3571
0.1668	0.0122	0.0048	0.0019	0.0133	0.0387	0.0127	104,957.7597
0.1586	0.0118	0.0048	0.0019	0.0129	0.0387	0.0127	166,790.4460
0.1533	0.0115	0.0048	0.0019	0.0125	0.0387	0.0127	83,506.5008
0.1465	0.0111	0.0048	0.0019	0.0121	0.0387	0.0127	76,192.2293
0.1423	0.0111	0.0048	0.0019	0.0121	0.0387	0.0127	76,381.9780
0.1317	0.0068	0.0048	0.0019	0.0074	0.0387	0.0127	51,070.3287
0.1287	0.0068	0.0048	0.0019	0.0074	0.0387	0.0127	50,471.2835
0.1260	0.0068	0.0048	0.0019	0.0074	0.0387	0.0127	50,121.5186

532.1156	676.1521	23.6626	8.8644	3.1146	25.7203
642.6364	868.1200	21.9462	12.3353	4.3342	23.8546
732.3082	968.7780	25.1892	14.2924	5.0219	27.3796
1,049.5761	1,360.1480	36.3523	20.8110	7.3123	39.5134
1,288.5228	1,636.4413	44.9226	25.9331	9.1120	48.8291
949.7973	1,182.7638	33.3205	19.3863	6.8117	36.2181
421.7105	830.6538	21.8064	19.5537	6.8705	23.7027
367.4790	746.1603	19.5759	18.4632	6.4873	21.2782
377.0956	919.6169	20.8345	24.7555	8.6982	22.6462
504.6030	1,286.0152	25.7717	36.2297	12.7298	28.0128
391.2016	1,231.7598	19.3725	37.7576	13.2667	21.0571
364.6767	1,223.2198	19.9223	39.0188	13.7099	21.6547
206.4578	1,158.3731	16.8721	40.1934	14.1226	18.3393
189.8744	1,149.2308	17.1936	41.1246	14.4497	18.6887
165.9633	1,136.1476	17.4817	41.9651	14.7451	19.0019
170.6976	1,157.1166	18.0865	43.5573	15.3045	19.6593
968,012.8983	298,584.6385	25,991.1812	6,582.6999	2,590.5055	28,251.3758
49,962.8740	20,429.1698	4,300.7241	36.4023	14.0345	4,674.7125
8,582.1726	5,283.2148	549.7974	7.6028	2.7171	597.6074
8,320.8555	4,729.3337	327.0441	7.5450	2.8214	355.4845
11,853.6568	6,523.9581	480.1422	10.6009	3.9936	521.8953
10,867.6768	6,520.3251	404.8448	10.0920	3.7264	440.0514
17,408.7063	7,206.2427	595.7247	19.4529	7.0789	647.5300
27,343.3577	9,083.4086	1,128.0830	24.6671	9.6699	1,226.1811
16,579.4682	6,380.3928	809.5832	20.9985	8.1978	879.9836
15,066.3816	5,605.4286	840.1238	21.8170	8.5236	913.1813
19,575.2220	6,865.0370	1,155.8140	27.7481	11.0278	1,256.3236
27,285.0484	9,080.6154	1,669.0677	37.3557	15.0888	1,814.2104
21,271.2228	3,203.9990	172.0285	49.2671	19.3388	186.9881
33,794.6417	4,720.5340	267.0120	76.3322	30.2479	290.2314
37,753.0231	6,594.5682	353.3589	104.8574	39.6952	384.0869
12,277.2011	3,810.5893	198.4242	65.5311	24.6031	215.6790
13,334.2213	3,156.7176	185.1702	60.8940	24.0037	201.2726
9,754.5212	2,217.6993	127.7890	45.6621	17.9994	138.9017
19,079.3911	4,216.6350	251.5319	90.2350	35.5696	273.4052
31,471.2708	6,764.9862	417.3868	150.2914	59.2433	453.6832
35,645.9828	7,458.1853	475.4230	171.7836	67.7151	516.7663
47,725.1989	9,728.6912	639.8867	231.9520	91.4330	695.5310
71,719.0186	13,510.9375	964.0622	366.4688	144.4579	1,047.8967
68,872.1748	16,807.4689	1,230.6411	486.9206	191.9383	1,337.6582
104,128.9350	27,253.6828	2,032.4218	830.1454	327.2333	2,209.1621
48,857.6472	13,963.7723	1,050.7429	440.1271	173.4930	1,142.1164
37,016.9516	14,179.9610	1,079.2376	467.7596	184.3857	1,173.0893
31,050.8180	14,636.6512	1,145.1351	496.9207	195.8807	1,244.7157
31,421.6788	14,222.7965	738.2230	521.7276	205.6594	802.4181
32,223.9659	14,445.8516	766.6118	542.5030	213.8485	833.2770
33,159.2203	14,737.5435	797.7646	565.1959	222.7935	867.1372

70.9149	20.7643
98.6827	28.8949
114.3394	33.4792
166.4877	48.7485
207.4646	60.7468
155.0902	45.4112
156.4298	45.8035
147.7055	43.2491
198.0440	57.9885
289.8374	84.8660
302.0614	88.4451
312.1506	91.3997
321.5476	94.1510
328.9960	96.3320
335.7203	98.3011
348.4580	102.0306
52,661.6030	17,270.1234
291.2178	93.5636
60.8223	18.1139
60.3596	18.8095
84.8071	26.6241
80.7360	24.8430
155.6229	47.1927
197.3366	64.4662
167.9876	54.6526
174.5357	56.8243
221.9848	73.5192
298.8458	100.5926
394.1375	128.9256
610.6579	201.6538
838.8592	264.6353
524.2481	164.0221
487.1524	160.0255
365.2959	119.9968
721.8801	237.1318
1,202.3314	394.9567
1,374.2693	451.4376
1,855.6167	609.5565
2,931.7502	963.0586
3,895.3609	1,279.5952
6,641.1566	2,181.5633
3,521.0132	1,156.6253
3,742.0775	1,229.2441
3,975.3745	1,305.8774
4,173.8265	1,371.0696
4,340.0262	1,425.6654
4,521.5668	1,485.2996

2.31.2026	diesel	Pass Truck	2026	122,896	0.4265	0.2816
2.32.32	diesel	Light Truck	2.32	341,345	1.5002	0.6385
2.32.1996	diesel	Light Truck	1996	1,889	12.1028	6.8322
2.32.1997	diesel	Light Truck	1997	396	10.9897	7.2723
2.32.1998	diesel	Light Truck	1998	392	18.2890	5.0182
2.32.1999	diesel	Light Truck	1999	551	9.0763	6.3659
2.32.2000	diesel	Light Truck	2000	525	13.6515	5.6966
2.32.2001	diesel	Light Truck	2001	1,012	7.5510	6.1848
2.32.2002	diesel	Light Truck	2002	1,280	11.2220	4.8158
2.32.2003	diesel	Light Truck	2003	1,090	10.6178	3.5843
2.32.2004	diesel	Light Truck	2004	1,132	7.6905	2.9489
2.32.2005	diesel	Light Truck	2005	1,439	6.4322	3.0042
2.32.2006	diesel	Light Truck	2006	1,936	5.6469	3.1349
2.32.2007	diesel	Light Truck	2007	2,556	3.9915	1.8025
2.32.2008	diesel	Light Truck	2008	3,959	3.6170	1.8616
2.32.2009	diesel	Light Truck	2009	5,449	4.5598	1.4335
2.32.2010	diesel	Light Truck	2010	3,407	4.4981	0.7820
2.32.2011	diesel	Light Truck	2011	3,159	3.3567	0.9454
2.32.2012	diesel	Light Truck	2012	2,369	2.8437	0.9150
2.32.2013	diesel	Light Truck	2013	4,681	2.8014	0.9047
2.32.2014	diesel	Light Truck	2014	7,797	2.7619	0.8952
2.32.2015	diesel	Light Truck	2015	8,912	2.7252	0.8863
2.32.2016	diesel	Light Truck	2016	12,033	2.6913	0.8780
2.32.2017	diesel	Light Truck	2017	19,012	1.5571	0.8168
2.32.2018	diesel	Light Truck	2018	25,261	1.2253	0.5899
2.32.2019	diesel	Light Truck	2019	43,067	1.1313	0.5207
2.32.2020	diesel	Light Truck	2020	22,793	1.0605	0.4614
2.32.2021	diesel	Light Truck	2021	24,233	0.8897	0.3310
2.32.2022	diesel	Light Truck	2022	25,754	0.8319	0.2633
2.32.2023	diesel	Light Truck	2023	27,043	0.4999	0.2501
2.32.2024	diesel	Light Truck	2024	28,122	0.4697	0.2458
2.32.2025	diesel	Light Truck	2025	29,310	0.4427	0.2421
2.32.2026	diesel	Light Truck	2026	30,783	0.4404	0.2404
2.41.41	diesel	Inter Bus	1.41	20,109	1.2231	4.3793
2.41.1996	diesel	Inter Bus	1996	176	6.7782	30.4490
2.41.1997	diesel	Inter Bus	1997	164	6.7785	30.4490
2.41.1998	diesel	Inter Bus	1998	185	6.7785	26.9523
2.41.1999	diesel	Inter Bus	1999	210	6.7783	19.0880
2.41.2000	diesel	Inter Bus	2000	240	6.7784	19.0883
2.41.2001	diesel	Inter Bus	2001	274	6.7786	19.0894
2.41.2002	diesel	Inter Bus	2002	304	6.7783	19.0878
2.41.2003	diesel	Inter Bus	2003	338	3.5696	11.3796
2.41.2004	diesel	Inter Bus	2004	367	3.5696	11.3795
2.41.2005	diesel	Inter Bus	2005	398	3.5696	11.3796
2.41.2006	diesel	Inter Bus	2006	432	3.5697	11.3796
2.41.2007	diesel	Inter Bus	2007	471	0.7879	7.4720
2.41.2008	diesel	Inter Bus	2008	516	0.7878	7.4721

0.1241	0.0068	0.0048	0.0019	0.0074	0.0387	0.0127	52,414.2602
0.2281	0.0187	0.0049	0.0018	0.0203	0.0389	0.0122	512,087.7692
2.7283	0.6106	0.0049	0.0019	0.6637	0.0389	0.0126	22,866.7269
2.5530	0.7009	0.0049	0.0019	0.7619	0.0389	0.0130	4,351.7917
3.4180	0.1700	0.0048	0.0017	0.1848	0.0388	0.0116	7,174.3511
2.3266	0.3310	0.0049	0.0020	0.3597	0.0390	0.0133	5,001.0141
2.8686	0.2502	0.0049	0.0019	0.2719	0.0389	0.0125	7,166.5840
1.8590	0.2800	0.0049	0.0020	0.3044	0.0390	0.0134	7,645.3035
1.8309	0.1825	0.0049	0.0018	0.1984	0.0388	0.0122	14,364.1925
1.5862	0.1535	0.0049	0.0018	0.1668	0.0388	0.0121	11,571.5011
1.2765	0.1533	0.0049	0.0018	0.1667	0.0388	0.0121	8,707.7066
1.2126	0.1704	0.0049	0.0019	0.1852	0.0389	0.0124	9,256.1627
1.1821	0.1878	0.0049	0.0019	0.2042	0.0389	0.0126	10,931.9987
0.3484	0.0163	0.0049	0.0018	0.0177	0.0388	0.0122	10,203.8232
0.3304	0.0163	0.0049	0.0018	0.0178	0.0389	0.0123	14,320.2587
0.3350	0.0156	0.0048	0.0018	0.0170	0.0388	0.0117	24,846.5885
0.3133	0.0143	0.0048	0.0017	0.0155	0.0388	0.0116	15,323.1209
0.2802	0.0144	0.0049	0.0018	0.0156	0.0389	0.0123	10,604.2223
0.2606	0.0128	0.0049	0.0018	0.0140	0.0389	0.0123	6,736.4091
0.2505	0.0128	0.0049	0.0018	0.0139	0.0389	0.0123	13,114.2529
0.2410	0.0127	0.0049	0.0018	0.0138	0.0389	0.0123	21,534.6202
0.2322	0.0127	0.0049	0.0018	0.0138	0.0389	0.0123	24,286.9576
0.2241	0.0126	0.0049	0.0018	0.0137	0.0389	0.0123	32,385.8139
0.1915	0.0118	0.0049	0.0018	0.0128	0.0389	0.0123	29,603.6719
0.1772	0.0111	0.0049	0.0018	0.0121	0.0389	0.0123	30,953.1273
0.1673	0.0106	0.0049	0.0018	0.0116	0.0389	0.0123	48,720.5405
0.1611	0.0102	0.0049	0.0018	0.0111	0.0389	0.0123	24,171.3506
0.1527	0.0097	0.0049	0.0018	0.0106	0.0389	0.0123	21,560.4006
0.1480	0.0097	0.0049	0.0018	0.0106	0.0389	0.0123	21,425.7386
0.1369	0.0060	0.0049	0.0018	0.0065	0.0389	0.0123	13,519.2684
0.1335	0.0060	0.0049	0.0018	0.0065	0.0389	0.0123	13,209.8606
0.1304	0.0060	0.0049	0.0018	0.0065	0.0389	0.0123	12,974.2521
0.1284	0.0060	0.0049	0.0018	0.0065	0.0389	0.0123	13,556.1585
0.2558	0.1688	0.0305	0.0045	0.1834	0.2440	0.0302	24,595.3147
1.5111	1.5726	0.0305	0.0045	1.7094	0.2440	0.0302	1,190.6822
1.5109	1.5725	0.0305	0.0045	1.7093	0.2440	0.0302	1,110.2424
1.5108	0.8915	0.0305	0.0045	0.9691	0.2440	0.0302	1,250.7284
1.5110	0.8915	0.0305	0.0045	0.9690	0.2440	0.0302	1,421.6893
1.5110	0.8915	0.0305	0.0045	0.9690	0.2440	0.0302	1,626.1003
1.5107	0.8916	0.0305	0.0045	0.9691	0.2440	0.0302	1,856.9136
1.5111	0.8915	0.0305	0.0045	0.9690	0.2440	0.0302	2,059.3253
1.0604	0.8052	0.0305	0.0045	0.8752	0.2440	0.0302	1,206.5026
1.0604	0.8052	0.0305	0.0045	0.8752	0.2440	0.0302	1,309.0503
1.0604	0.8052	0.0305	0.0045	0.8753	0.2440	0.0302	1,420.9314
1.0604	0.8052	0.0305	0.0045	0.8752	0.2440	0.0302	1,541.5602
0.1087	0.0405	0.0305	0.0045	0.0440	0.2440	0.0302	371.4017
0.1087	0.0405	0.0305	0.0045	0.0440	0.2440	0.0302	406.3358

34,610.3934	15,246.2415	837.3810	593.8430	234.0864	910.1985
217,950.7238	77,875.6030	6,390.5615	1,657.8140	626.9285	6,946.2870
12,908.4936	5,154.7719	1,153.6323	9.1866	3.5685	1,253.9535
2,879.7558	1,010.9645	277.5490	1.9278	0.7712	301.6844
1,968.5369	1,340.8023	66.6931	1.9013	0.6839	72.4927
3,507.5782	1,281.9679	182.3595	2.6856	1.1025	198.2177
2,990.5397	1,505.8973	131.3227	2.5516	0.9833	142.7426
6,261.9765	1,882.2216	283.5373	4.9354	2.0307	308.1937
6,164.2256	2,343.4910	233.6135	6.2151	2.3365	253.9287
3,906.2165	1,728.7206	167.2375	5.2906	1.9797	181.7804
3,338.9810	1,445.3738	173.6164	5.4969	2.0586	188.7141
4,323.1733	1,744.9904	245.1724	6.9919	2.6709	266.4926
6,069.0288	2,288.3893	363.6635	9.4142	3.6685	395.2874
4,607.7693	890.6938	41.6994	12.4133	4.6737	45.3256
7,370.3238	1,308.2178	64.7069	19.2337	7.3218	70.3338
7,810.9144	1,825.5110	85.0708	26.4177	9.5659	92.4685
2,663.9192	1,067.3306	48.6693	16.5100	5.9290	52.9015
2,986.4880	885.2176	45.4726	15.3432	5.8049	49.4268
2,167.4984	617.3729	30.4270	11.5052	4.3528	33.0729
4,235.3087	1,172.5521	59.8067	22.7361	8.6019	65.0076
6,979.4792	1,879.0854	99.1113	37.8683	14.3269	107.7300
7,898.2229	2,069.3287	112.7528	43.2836	16.3758	122.5579
10,565.7386	2,696.3094	151.5828	58.4439	22.1114	164.7643
15,529.1201	3,641.0166	224.0196	92.3376	34.9347	243.5003
14,901.2130	4,476.9009	281.0992	122.6872	46.4169	305.5435
22,426.4260	7,203.5611	457.6706	209.1679	79.1358	497.4709
10,516.2596	3,672.1600	233.4531	110.7018	41.8825	253.7541
8,020.4268	3,701.1977	235.9312	117.6962	44.5286	256.4478
6,780.7366	3,810.9503	250.3390	125.0824	47.3233	272.1086
6,762.1933	3,702.5338	162.3513	131.3416	49.6913	176.4694
6,913.4335	3,753.3374	168.5560	136.5843	51.6749	183.2136
7,096.0898	3,823.5062	175.4262	142.3544	53.8577	190.6813
7,400.6568	3,951.2290	184.0184	149.5085	56.5645	200.0207
88,064.8400	5,143.9504	3,393.7741	613.3571	91.1931	3,688.8972
5,348.7678	265.4476	276.2559	5.3575	0.7965	300.2790
4,987.2213	247.4644	257.5622	4.9961	0.7428	279.9603
4,973.0650	278.7684	164.4991	5.6282	0.8368	178.8039
4,003.5240	316.9249	186.9795	6.3971	0.9511	203.2393
4,579.1794	362.4714	213.8654	7.3171	1.0879	232.4630
5,229.2931	413.8484	244.2295	8.3562	1.2424	265.4680
5,799.1064	459.0793	270.8401	9.2661	1.3777	294.3925
3,846.2334	358.3960	272.1613	10.3094	1.5328	295.8285
4,173.1181	388.8610	295.2859	11.1845	1.6629	320.9636
4,529.8491	422.0947	320.5383	12.1417	1.8052	348.4121
4,914.2994	457.9294	347.7249	13.1709	1.9582	377.9633
3,522.4009	51.2527	19.0879	14.3776	2.1377	20.7478
3,853.7711	56.0731	20.8837	15.7307	2.3388	22.6998

4,750.7460	1,560.5818
13,262.5148	4,179.5466
73.4924	23.7902
15.4227	5.1411
15.2105	4.5595
21.4848	7.3499
20.4131	6.5553
39.4835	13.5380
49.7206	15.5767
42.3250	13.1981
43.9750	13.7239
55.9356	17.8060
75.3137	24.4571
99.3064	31.1578
153.8696	48.8119
211.3421	63.7728
132.0799	39.5269
122.7454	38.6994
92.0419	29.0192
181.8889	57.3463
302.9463	95.5134
346.2688	109.1722
467.5520	147.4104
738.7011	232.8992
981.4967	309.4485
1,673.3449	527.5750
885.6148	279.2178
941.5692	296.8591
1,000.6598	315.4901
1,050.7330	331.2772
1,092.6738	344.5006
1,138.8350	359.0543
1,196.0685	377.0989
4,906.8580	607.9574
42.8596	5.3102
39.9684	4.9520
45.0257	5.5787
51.1769	6.3407
58.5367	7.2526
66.8497	8.2828
74.1290	9.1844
82.4755	10.2185
89.4759	11.0862
97.1337	12.0349
105.3670	13.0549
115.0212	14.2511
125.8459	15.5922

2.41.2009	diesel	Inter Bus	2009	561	0.7878	7.4724
2.41.2010	diesel	Inter Bus	2010	609	0.5137	1.9695
2.41.2011	diesel	Inter Bus	2011	653	0.5138	1.9695
2.41.2012	diesel	Inter Bus	2012	692	0.5138	1.9695
2.41.2013	diesel	Inter Bus	2013	734	0.4934	1.7924
2.41.2014	diesel	Inter Bus	2014	775	0.4926	1.7835
2.41.2015	diesel	Inter Bus	2015	820	0.4926	1.7835
2.41.2016	diesel	Inter Bus	2016	866	0.4926	1.7835
2.41.2017	diesel	Inter Bus	2017	897	0.4926	1.7834
2.41.2018	diesel	Inter Bus	2018	930	0.4926	1.6839
2.41.2019	diesel	Inter Bus	2019	964	0.4926	1.6574
2.41.2020	diesel	Inter Bus	2020	993	0.4926	1.6310
2.41.2021	diesel	Inter Bus	2021	1,032	0.4910	1.5528
2.41.2022	diesel	Inter Bus	2022	1,054	0.4910	1.5203
2.41.2023	diesel	Inter Bus	2023	1,072	0.4299	1.1164
2.41.2024	diesel	Inter Bus	2024	1,087	0.4299	1.1165
2.41.2025	diesel	Inter Bus	2025	1,127	0.4299	1.1165
2.41.2026	diesel	Inter Bus	2026	1,171	0.4299	1.1165
2.42.42	diesel	Transit Bus	2.42	59,916	1.0500	2.7762
2.42.1996	diesel	Transit Bus	1996	293	8.4248	25.7776
2.42.1997	diesel	Transit Bus	1997	258	8.4131	25.7777
2.42.1998	diesel	Transit Bus	1998	309	8.4009	20.8522
2.42.1999	diesel	Transit Bus	1999	379	8.3894	17.0516
2.42.2000	diesel	Transit Bus	2000	467	8.3787	17.0516
2.42.2001	diesel	Transit Bus	2001	545	8.3677	17.0517
2.42.2002	diesel	Transit Bus	2002	614	8.3573	17.0516
2.42.2003	diesel	Transit Bus	2003	697	3.4821	9.6713
2.42.2004	diesel	Transit Bus	2004	770	3.4722	9.6713
2.42.2005	diesel	Transit Bus	2005	851	3.4629	9.6714
2.42.2006	diesel	Transit Bus	2006	945	3.4534	9.6714
2.42.2007	diesel	Transit Bus	2007	1,056	0.9234	4.8044
2.42.2008	diesel	Transit Bus	2008	1,178	0.9150	4.8044
2.42.2009	diesel	Transit Bus	2009	1,317	0.9064	4.8044
2.42.2010	diesel	Transit Bus	2010	1,466	0.5972	1.7058
2.42.2011	diesel	Transit Bus	2011	1,620	0.5891	1.7058
2.42.2012	diesel	Transit Bus	2012	1,772	0.5816	1.7058
2.42.2013	diesel	Transit Bus	2013	1,944	0.5544	1.5210
2.42.2014	diesel	Transit Bus	2014	2,119	0.5473	1.5174
2.42.2015	diesel	Transit Bus	2015	2,316	0.5402	1.5174
2.42.2016	diesel	Transit Bus	2016	2,528	0.5332	1.5174
2.42.2017	diesel	Transit Bus	2017	2,702	0.5159	1.4126
2.42.2018	diesel	Transit Bus	2018	2,895	0.5094	1.4126
2.42.2019	diesel	Transit Bus	2019	3,100	0.4884	1.2729
2.42.2020	diesel	Transit Bus	2020	3,300	0.4825	1.2729
2.42.2021	diesel	Transit Bus	2021	3,544	0.4620	1.1332
2.42.2022	diesel	Transit Bus	2022	3,742	0.4564	1.1332
2.42.2023	diesel	Transit Bus	2023	3,930	0.4342	0.9761

0.1087	0.0405	0.0305	0.0045	0.0440	0.2440	0.0302	441.6145
0.0700	0.0377	0.0305	0.0045	0.0410	0.2440	0.0302	312.6386
0.0700	0.0377	0.0305	0.0045	0.0410	0.2440	0.0302	335.4759
0.0700	0.0377	0.0305	0.0045	0.0410	0.2440	0.0302	355.3520
0.0671	0.0338	0.0305	0.0045	0.0368	0.2440	0.0302	362.3197
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	381.8790
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	403.9879
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	426.4203
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	441.8168
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	457.9190
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	474.8850
0.0671	0.0337	0.0305	0.0045	0.0366	0.2440	0.0302	489.3003
0.0669	0.0335	0.0305	0.0045	0.0364	0.2440	0.0302	506.8957
0.0669	0.0335	0.0305	0.0045	0.0364	0.2440	0.0302	517.3668
0.0583	0.0230	0.0305	0.0045	0.0250	0.2440	0.0302	460.7037
0.0583	0.0230	0.0305	0.0045	0.0250	0.2440	0.0302	467.3397
0.0583	0.0230	0.0305	0.0045	0.0250	0.2440	0.0302	484.5306
0.0583	0.0230	0.0305	0.0045	0.0250	0.2440	0.0302	503.4057
0.1943	0.0579	0.0206	0.0030	0.0629	0.1645	0.0201	62,913.9105
1.5723	0.4964	0.0206	0.0030	0.5396	0.1645	0.0201	2,468.9801
1.5696	0.4964	0.0206	0.0030	0.5396	0.1645	0.0201	2,167.8858
1.5669	0.3684	0.0206	0.0030	0.4005	0.1645	0.0201	2,598.0196
1.5644	0.3684	0.0206	0.0030	0.4004	0.1645	0.0201	3,177.9611
1.5620	0.3683	0.0206	0.0030	0.4004	0.1645	0.0201	3,909.6554
1.5595	0.3683	0.0206	0.0030	0.4003	0.1645	0.0201	4,556.2683
1.5572	0.3683	0.0206	0.0030	0.4003	0.1645	0.0201	5,132.6158
1.0725	0.3329	0.0206	0.0030	0.3618	0.1645	0.0201	2,425.8070
1.0703	0.3329	0.0206	0.0030	0.3618	0.1645	0.0201	2,675.0068
1.0683	0.3328	0.0206	0.0030	0.3618	0.1645	0.0201	2,948.2681
1.0662	0.3328	0.0206	0.0030	0.3617	0.1645	0.0201	3,264.4441
0.1260	0.0335	0.0206	0.0030	0.0364	0.1645	0.0201	975.5972
0.1251	0.0335	0.0206	0.0030	0.0364	0.1645	0.0201	1,077.6164
0.1242	0.0335	0.0206	0.0030	0.0364	0.1645	0.0201	1,193.4327
0.0783	0.0316	0.0206	0.0030	0.0344	0.1645	0.0201	875.2046
0.0775	0.0316	0.0206	0.0030	0.0344	0.1645	0.0201	954.4978
0.0767	0.0316	0.0206	0.0030	0.0344	0.1645	0.0201	1,030.4213
0.0730	0.0280	0.0206	0.0030	0.0304	0.1645	0.0201	1,077.6530
0.0722	0.0279	0.0206	0.0030	0.0303	0.1645	0.0201	1,159.6332
0.0715	0.0279	0.0206	0.0030	0.0303	0.1645	0.0201	1,251.3365
0.0707	0.0279	0.0206	0.0030	0.0303	0.1645	0.0201	1,348.2736
0.0684	0.0258	0.0206	0.0030	0.0281	0.1645	0.0201	1,393.6666
0.0677	0.0258	0.0206	0.0030	0.0281	0.1645	0.0201	1,474.5191
0.0649	0.0229	0.0206	0.0030	0.0249	0.1645	0.0201	1,514.1954
0.0642	0.0229	0.0206	0.0030	0.0249	0.1645	0.0201	1,592.0418
0.0614	0.0203	0.0206	0.0030	0.0220	0.1645	0.0201	1,636.9991
0.0608	0.0203	0.0206	0.0030	0.0220	0.1645	0.0201	1,708.1248
0.0578	0.0172	0.0206	0.0030	0.0187	0.1645	0.0201	1,706.4687

4,188.5700	60.9417	22.6983	17.0977	2.5421	24.6721
1,198.5428	42.6045	22.9504	18.5582	2.7593	24.9461
1,286.0444	45.7139	24.6283	19.9166	2.9612	26.7700
1,362.2401	48.4224	26.0875	21.0966	3.1366	28.3560
1,316.0835	49.2976	24.8302	22.3964	3.3299	26.9894
1,382.7070	52.0370	26.1077	23.6478	3.5159	28.3780
1,462.7630	55.0498	27.6193	25.0169	3.7195	30.0210
1,543.9849	58.1065	29.1529	26.4060	3.9260	31.6880
1,599.7322	60.2045	30.2055	27.3594	4.0678	32.8322
1,565.4384	62.3985	31.3063	28.3565	4.2160	34.0287
1,597.9650	64.7105	32.4663	29.4072	4.3722	35.2895
1,620.2201	66.6749	33.4517	30.2999	4.5049	36.3607
1,603.1607	69.0638	34.5822	31.4914	4.6821	37.5895
1,602.0391	70.4904	35.2966	32.1420	4.7788	38.3659
1,196.3814	62.4273	24.6410	32.6852	4.8596	26.7838
1,213.6119	63.3263	24.9959	33.1559	4.9296	27.1696
1,258.2552	65.6560	25.9154	34.3756	5.1109	28.1690
1,307.2715	68.2136	26.9250	35.7147	5.3100	29.2664
166,340.4428	11,643.1871	3,466.7848	1,231.9075	180.9875	3,768.2571
7,554.4489	460.7682	145.4858	6.0255	0.8852	158.1373
6,642.4028	404.4661	127.9100	5.2980	0.7784	139.0330
6,448.6883	484.5807	113.9382	6.3584	0.9342	123.8463
6,459.2468	592.5937	139.5457	7.7884	1.1442	151.6805
7,956.5946	728.8504	171.8757	9.5939	1.4095	186.8219
9,284.7555	849.1725	200.5435	11.1953	1.6448	217.9826
10,472.1757	956.3562	226.1671	12.6271	1.8551	245.8347
6,737.5378	747.1851	231.9076	14.3234	2.1044	252.0744
7,450.9145	824.5946	256.4339	15.8400	2.3272	278.7333
8,234.1409	909.5084	283.3594	17.5051	2.5718	308.0000
9,142.0870	1,007.8070	314.5705	19.4353	2.8554	341.9266
5,075.7830	133.1607	35.3680	21.7217	3.1913	38.4436
5,658.4950	147.3956	39.4246	24.2154	3.5577	42.8529
6,325.8130	163.5901	44.0699	27.0712	3.9772	47.9022
2,499.9228	114.8173	46.3580	30.1320	4.4269	50.3892
2,763.7090	125.5562	51.2448	33.3115	4.8940	55.7010
3,022.2980	135.8932	56.0346	36.4284	5.3519	60.9073
2,956.6085	141.8343	54.3358	39.9671	5.8718	59.0609
3,215.3128	153.0367	59.1030	43.5669	6.4007	64.2426
3,514.8550	165.5723	64.6029	47.6256	6.9970	70.2209
3,836.7450	178.8736	70.5127	51.9871	7.6378	76.6445
3,816.2280	184.8402	69.7978	55.5443	8.1604	75.8674
4,089.0210	196.0743	74.7802	59.5149	8.7437	81.2832
3,946.1530	201.1015	71.0971	63.7383	9.3642	77.2798
4,200.5520	211.9819	75.6732	67.8475	9.9679	82.2537
4,015.7920	217.6517	71.8133	72.8591	10.7042	78.0582
4,241.0760	227.6787	75.8340	76.9462	11.3047	82.4286
3,835.7050	226.9788	67.4484	80.7965	11.8703	73.3138

136.7818	16.9472
148.4652	18.3954
159.3332	19.7413
168.7735	20.9109
179.1710	22.1992
189.1820	23.4395
200.1350	24.7966
211.2478	26.1735
218.8757	27.1185
226.8520	28.1069
235.2571	29.1482
242.3983	30.0330
251.9320	31.2142
257.1358	31.8590
261.4820	32.3974
265.2481	32.8640
275.0049	34.0730
285.7175	35.4002
9,855.2587	1,206.5887
48.2040	5.9016
42.3843	5.1891
50.8676	6.2278
62.3073	7.6283
76.7511	9.3967
89.5626	10.9652
101.0168	12.3676
114.5876	14.0291
126.7202	15.5145
140.0407	17.1453
155.4824	19.0358
173.7739	21.2753
193.7238	23.7177
216.5698	26.5148
241.0555	29.5127
266.4914	32.6268
291.4259	35.6796
319.7361	39.1456
348.5347	42.6715
381.0051	46.6468
415.8972	50.9187
444.3545	54.4028
476.1190	58.2917
509.9064	62.4285
542.7799	66.4531
582.8720	71.3617
615.5703	75.3648
646.3718	79.1359

2.42.2024	diesel	Transit Bus	2024	4,120		0.4289	0.9761
2.42.2025	diesel	Transit Bus	2025	4,410		0.4240	0.9761
2.42.2026	diesel	Transit Bus	2026	4,731		0.4191	0.9761
2.43.43	diesel	School Bus	3.43	41,848		1.5929	2.2270
2.43.1996	diesel	School Bus	1996	354		4.5366	15.3763
2.43.1997	diesel	School Bus	1997	341		4.5366	15.3763
2.43.1998	diesel	School Bus	1998	384		4.5366	13.7201
2.43.1999	diesel	School Bus	1999	436		4.5366	8.2100
2.43.2000	diesel	School Bus	2000	499		4.5366	8.2101
2.43.2001	diesel	School Bus	2001	570		4.5366	8.2100
2.43.2002	diesel	School Bus	2002	632		4.5366	8.2100
2.43.2003	diesel	School Bus	2003	703		3.5776	6.3298
2.43.2004	diesel	School Bus	2004	763		3.5776	6.3298
2.43.2005	diesel	School Bus	2005	828		3.5776	6.3299
2.43.2006	diesel	School Bus	2006	899		3.5776	6.3298
2.43.2007	diesel	School Bus	2007	981		1.3966	3.2218
2.43.2008	diesel	School Bus	2008	1,073		1.3966	3.2218
2.43.2009	diesel	School Bus	2009	1,167		1.3966	3.2219
2.43.2010	diesel	School Bus	2010	1,266		1.1534	1.1176
2.43.2011	diesel	School Bus	2011	1,359		1.1534	1.1176
2.43.2012	diesel	School Bus	2012	1,439		1.1534	1.1176
2.43.2013	diesel	School Bus	2013	1,528		1.1354	0.9979
2.43.2014	diesel	School Bus	2014	1,613		1.1352	0.9940
2.43.2015	diesel	School Bus	2015	1,707		1.1352	0.9940
2.43.2016	diesel	School Bus	2016	1,802		1.1352	0.9940
2.43.2017	diesel	School Bus	2017	1,867		1.1352	0.9940
2.43.2018	diesel	School Bus	2018	1,935		1.1352	0.9906
2.43.2019	diesel	School Bus	2019	2,006		1.1352	0.9897
2.43.2020	diesel	School Bus	2020	2,068		1.1352	0.9888
2.43.2021	diesel	School Bus	2021	2,147		1.1265	0.9296
2.43.2022	diesel	School Bus	2022	2,196		1.1265	0.9286
2.43.2023	diesel	School Bus	2023	2,234		1.0850	0.6572
2.43.2024	diesel	School Bus	2024	2,266		1.0850	0.6572
2.43.2025	diesel	School Bus	2025	2,348		1.0850	0.6572
2.43.2026	diesel	School Bus	2026	2,436		1.0850	0.6572
2.51.51	diesel	Garbage	1.51	36,071		0.9690	2.3023
2.51.1996	diesel	Garbage	1996	15		16.0042	31.0612
2.51.1997	diesel	Garbage	1997	19		12.1116	31.0611
2.51.1998	diesel	Garbage	1998	19		10.5670	27.3404
2.51.1999	diesel	Garbage	1999	40		9.7349	20.6223
2.51.2000	diesel	Garbage	2000	68		9.0217	20.0362
2.51.2001	diesel	Garbage	2001	93		8.9567	20.9508
2.51.2002	diesel	Garbage	2002	121		8.7420	21.1132
2.51.2003	diesel	Garbage	2003	155		4.7009	11.5636
2.51.2004	diesel	Garbage	2004	191		4.5615	11.5636
2.51.2005	diesel	Garbage	2005	232		4.4370	11.5636

0.0572	0.0172	0.0206	0.0030	0.0187	0.1645	0.0201	1,767.3793
0.0567	0.0172	0.0206	0.0030	0.0187	0.1645	0.0201	1,869.4550
0.0562	0.0172	0.0206	0.0030	0.0187	0.1645	0.0201	1,982.4823
0.3429	0.1012	0.0170	0.0028	0.1100	0.1358	0.0184	66,660.0557
1.8950	1.1710	0.0170	0.0028	1.2728	0.1358	0.0184	1,606.1038
1.8950	1.1710	0.0170	0.0028	1.2728	0.1358	0.0184	1,546.2410
1.8950	0.5347	0.0170	0.0028	0.5811	0.1358	0.0184	1,741.9764
1.8950	0.5347	0.0170	0.0028	0.5811	0.1358	0.0184	1,980.0950
1.8950	0.5347	0.0170	0.0028	0.5812	0.1358	0.0184	2,264.7566
1.8950	0.5347	0.0170	0.0028	0.5811	0.1358	0.0184	2,586.1146
1.8950	0.5347	0.0170	0.0028	0.5811	0.1358	0.0184	2,868.1499
1.0969	0.4824	0.0170	0.0028	0.5243	0.1358	0.0184	2,516.4044
1.0969	0.4824	0.0170	0.0028	0.5243	0.1358	0.0184	2,730.1938
1.0968	0.4824	0.0170	0.0028	0.5243	0.1358	0.0184	2,963.6497
1.0969	0.4824	0.0170	0.0028	0.5243	0.1358	0.0184	3,215.1565
0.1735	0.0194	0.0170	0.0028	0.0211	0.1358	0.0184	1,370.0777
0.1735	0.0194	0.0170	0.0028	0.0211	0.1358	0.0184	1,498.9698
0.1735	0.0194	0.0170	0.0028	0.0211	0.1358	0.0184	1,629.1503
0.1351	0.0183	0.0170	0.0028	0.0199	0.1358	0.0184	1,460.6857
0.1351	0.0183	0.0170	0.0028	0.0199	0.1358	0.0184	1,567.2296
0.1351	0.0183	0.0170	0.0028	0.0199	0.1358	0.0184	1,660.0897
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	1,734.8934
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	1,831.4401
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	1,937.4755
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	2,045.0550
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	2,118.9025
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	2,196.1142
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	2,277.4861
0.1322	0.0162	0.0170	0.0028	0.0176	0.1358	0.0184	2,347.2418
0.1309	0.0152	0.0170	0.0028	0.0165	0.1358	0.0184	2,418.7404
0.1309	0.0152	0.0170	0.0028	0.0165	0.1358	0.0184	2,473.5995
0.1243	0.0104	0.0170	0.0028	0.0113	0.1358	0.0184	2,424.3656
0.1243	0.0104	0.0170	0.0028	0.0113	0.1358	0.0184	2,458.4751
0.1243	0.0104	0.0170	0.0028	0.0113	0.1358	0.0184	2,548.1978
0.1243	0.0104	0.0170	0.0028	0.0113	0.1358	0.0184	2,643.0242
0.1420	0.0669	0.0334	0.0055	0.0727	0.2669	0.0369	34,954.0801
3.1671	1.5176	0.0324	0.0053	1.6495	0.2589	0.0354	233.0778
2.3040	1.4980	0.0326	0.0054	1.6283	0.2605	0.0358	233.4451
1.9934	0.9909	0.0324	0.0053	1.0771	0.2588	0.0354	203.1246
1.8375	0.9835	0.0321	0.0053	1.0690	0.2571	0.0351	389.6334
1.8569	0.9482	0.0305	0.0049	1.0306	0.2439	0.0329	616.5391
1.5847	0.9995	0.0329	0.0054	1.0865	0.2633	0.0363	837.2635
1.4966	1.0079	0.0333	0.0055	1.0956	0.2663	0.0368	1,059.1246
1.2991	0.9133	0.0334	0.0056	0.9927	0.2672	0.0370	729.3139
1.2698	0.9093	0.0332	0.0055	0.9884	0.2659	0.0368	869.4397
1.2425	0.9110	0.0333	0.0055	0.9902	0.2666	0.0369	1,029.9779

4,021.8480	235.6850	70.7136	84.7175	12.4464	76.8629
4,304.1150	249.9106	75.6681	90.6632	13.3199	82.2481
4,617.4180	265.6716	81.1675	97.2626	14.2895	88.2258
93,195.1576	14,349.7170	4,236.8391	710.5998	115.1896	4,605.2727
5,443.7167	670.8895	414.5596	6.0118	0.9745	450.6089
5,240.8662	645.8952	399.1139	5.7876	0.9382	433.8202
5,268.3115	727.6534	205.2988	6.5203	1.0569	223.1514
3,583.4638	827.1141	233.3629	7.4116	1.2014	253.6561
4,098.6370	946.0170	266.9112	8.4772	1.3742	290.1219
4,680.2141	1,080.2642	304.7856	9.6799	1.5691	331.2895
5,190.5836	1,198.0744	338.0232	10.7356	1.7403	367.4178
4,452.2755	771.5012	339.2754	11.9438	1.9361	368.7784
4,830.5514	837.0500	368.1006	12.9585	2.1006	400.1112
5,243.6083	908.6221	399.5787	14.0667	2.2803	434.3260
5,688.5638	985.7311	433.4854	15.2603	2.4737	471.1811
3,160.6330	170.2101	18.9995	16.6580	2.7003	20.6517
3,457.9446	186.2211	20.7867	18.2251	2.9543	22.5944
3,758.3102	202.3956	22.5923	19.8081	3.2109	24.5570
1,415.3119	171.0503	23.1679	21.5046	3.4859	25.1826
1,518.5841	183.5314	24.8581	23.0732	3.7402	27.0198
1,608.5580	194.4047	26.3309	24.4402	3.9618	28.6207
1,524.8645	202.0402	24.7733	25.9459	4.2059	26.9276
1,603.7046	213.3401	26.1195	27.3957	4.4409	28.3908
1,696.5548	225.6917	27.6317	28.9818	4.6980	30.0346
1,790.7601	238.2237	29.1661	30.5911	4.9589	31.7023
1,855.4173	246.8248	30.2191	31.6956	5.1379	32.8470
1,916.5145	255.8199	31.3204	32.8508	5.3252	34.0441
1,985.7287	265.2989	32.4809	34.0678	5.5225	35.3054
2,044.6996	273.4241	33.4758	35.1113	5.6916	36.3868
1,996.0047	280.9804	32.6869	36.4580	5.9099	35.5294
2,038.8917	287.3532	33.4284	37.2849	6.0440	36.3353
1,468.4436	277.7374	23.1765	37.9402	6.1502	25.1919
1,489.1066	281.6456	23.5026	38.4740	6.2367	25.5464
1,543.4488	291.9241	24.3603	39.8781	6.4643	26.4787
1,600.8849	302.7873	25.2668	41.3620	6.7049	27.4640
83,044.5802	5,123.8439	2,412.7500	1,203.3540	199.8766	2,622.5632
452.3608	46.1237	22.1010	0.4713	0.0774	24.0229
598.6861	44.4076	28.8731	0.6276	0.1034	31.3839
525.5501	38.3187	19.0478	0.6219	0.1022	20.7042
825.3998	73.5451	39.3629	1.2862	0.2108	42.7859
1,369.2696	126.8985	64.7974	2.0831	0.3372	70.4321
1,958.4730	148.1365	93.4356	3.0761	0.5085	101.5609
2,557.9390	181.3190	122.1163	4.0329	0.6693	132.7355
1,794.0225	201.5480	141.6911	5.1824	0.8612	154.0126
2,204.0737	242.0248	173.3226	6.3358	1.0510	188.3947
2,684.2873	288.4197	211.4641	7.7372	1.2847	229.8532

677.7409	82.9764
725.3052	88.7998
778.1007	95.2636
5,684.7979	767.9345
48.0945	6.4969
46.3011	6.2546
52.1623	7.0464
59.2930	8.0097
67.8174	9.1612
77.4393	10.4610
85.8851	11.6018
95.5500	12.9074
103.6679	14.0040
112.5337	15.2018
122.0826	16.4916
133.2639	18.0020
145.8009	19.6956
158.4648	21.4064
172.0369	23.2397
184.5857	24.9349
195.5220	26.4122
207.5682	28.0394
219.1648	29.6061
231.8539	31.3201
244.7290	33.0592
253.5645	34.2530
262.8058	35.5012
272.5424	36.8166
280.8905	37.9443
291.6632	39.3995
298.2798	40.2932
303.5211	41.0013
307.7920	41.5783
319.0248	43.0956
330.8968	44.6993
9,626.8306	1,332.5176
3.7703	0.5162
5.0212	0.6891
4.9753	0.6812
10.2900	1.4054
16.6648	2.2483
24.6088	3.3899
32.2631	4.4623
41.4591	5.7412
50.6865	7.0070
61.8980	8.5650

2.51.2006	diesel	Garbage	2006	279	4.3359	11.5636
2.51.2007	diesel	Garbage	2007	336	1.6292	8.4431
2.51.2008	diesel	Garbage	2008	400	1.5591	8.4182
2.51.2009	diesel	Garbage	2009	475	1.4948	8.4697
2.51.2010	diesel	Garbage	2010	557	1.2078	2.0396
2.51.2011	diesel	Garbage	2011	678	1.1236	2.0396
2.51.2012	diesel	Garbage	2012	803	1.0561	2.0396
2.51.2013	diesel	Garbage	2013	947	0.9757	1.8186
2.51.2014	diesel	Garbage	2014	1,102	0.9284	1.8038
2.51.2015	diesel	Garbage	2015	1,275	0.8893	1.8038
2.51.2016	diesel	Garbage	2016	1,468	0.8558	1.8038
2.51.2017	diesel	Garbage	2017	1,644	0.8268	1.8038
2.51.2018	diesel	Garbage	2018	1,836	0.8014	1.8038
2.51.2019	diesel	Garbage	2019	2,044	0.7789	1.8038
2.51.2020	diesel	Garbage	2020	2,529	0.7590	1.8038
2.51.2021	diesel	Garbage	2021	2,771	0.7408	1.8008
2.51.2022	diesel	Garbage	2022	2,968	0.7247	1.8008
2.51.2023	diesel	Garbage	2023	3,157	0.6533	1.3027
2.51.2024	diesel	Garbage	2024	3,177	0.6533	1.3027
2.51.2025	diesel	Garbage	2025	3,278	0.6533	1.3027
2.51.2026	diesel	Garbage	2026	3,393	0.6533	1.3027
2.52.52	diesel	SU S-haul Truck	2.52	596,130	0.9529	1.4048
2.52.1996	diesel	SU S-haul Truck	1996	393	12.5607	19.7656
2.52.1997	diesel	SU S-haul Truck	1997	361	10.0525	19.6786
2.52.1998	diesel	SU S-haul Truck	1998	598	10.4934	17.0808
2.52.1999	diesel	SU S-haul Truck	1999	738	8.4880	10.8319
2.52.2000	diesel	SU S-haul Truck	2000	1,082	8.0543	10.6891
2.52.2001	diesel	SU S-haul Truck	2001	1,460	7.8925	10.6283
2.52.2002	diesel	SU S-haul Truck	2002	1,580	6.9106	10.2709
2.52.2003	diesel	SU S-haul Truck	2003	2,097	5.1660	8.4605
2.52.2004	diesel	SU S-haul Truck	2004	2,543	5.1642	8.3908
2.52.2005	diesel	SU S-haul Truck	2005	3,499	5.1517	8.3172
2.52.2006	diesel	SU S-haul Truck	2006	4,029	4.8798	8.3280
2.52.2007	diesel	SU S-haul Truck	2007	5,217	2.3228	4.7218
2.52.2008	diesel	SU S-haul Truck	2008	5,558	1.5868	4.5588
2.52.2009	diesel	SU S-haul Truck	2009	6,333	2.0182	4.7895
2.52.2010	diesel	SU S-haul Truck	2010	6,798	1.5777	1.6152
2.52.2011	diesel	SU S-haul Truck	2011	9,198	1.2793	1.5880
2.52.2012	diesel	SU S-haul Truck	2012	11,432	1.1564	1.5555
2.52.2013	diesel	SU S-haul Truck	2013	14,005	1.0478	1.4260
2.52.2014	diesel	SU S-haul Truck	2014	16,794	0.9754	1.4025
2.52.2015	diesel	SU S-haul Truck	2015	19,926	0.9178	1.3872
2.52.2016	diesel	SU S-haul Truck	2016	23,423	0.8707	1.3747
2.52.2017	diesel	SU S-haul Truck	2017	26,711	0.8313	1.3643
2.52.2018	diesel	SU S-haul Truck	2018	30,289	0.7980	1.2324
2.52.2019	diesel	SU S-haul Truck	2019	34,173	0.7694	1.1928
2.52.2020	diesel	SU S-haul Truck	2020	42,926	0.7447	1.1543

1.2204	0.9118	0.0334	0.0055	0.9911	0.2671	0.0370	1,210.9365
0.1939	0.0477	0.0334	0.0055	0.0518	0.2669	0.0370	547.6068
0.1868	0.0475	0.0332	0.0055	0.0516	0.2660	0.0368	624.2908
0.1801	0.0478	0.0335	0.0056	0.0520	0.2680	0.0371	709.6811
0.1414	0.0451	0.0335	0.0056	0.0491	0.2677	0.0371	672.6512
0.1328	0.0450	0.0334	0.0055	0.0489	0.2670	0.0370	761.8852
0.1259	0.0450	0.0334	0.0055	0.0489	0.2670	0.0370	848.1536
0.1166	0.0397	0.0334	0.0055	0.0432	0.2670	0.0370	924.3050
0.1119	0.0395	0.0334	0.0055	0.0429	0.2670	0.0370	1,022.9738
0.1079	0.0395	0.0334	0.0055	0.0429	0.2670	0.0370	1,133.9196
0.1045	0.0394	0.0334	0.0055	0.0429	0.2670	0.0370	1,256.0323
0.1015	0.0394	0.0334	0.0055	0.0429	0.2670	0.0370	1,359.2551
0.0989	0.0394	0.0334	0.0055	0.0429	0.2670	0.0370	1,471.1092
0.0966	0.0394	0.0334	0.0055	0.0428	0.2670	0.0370	1,591.8165
0.0946	0.0394	0.0334	0.0055	0.0428	0.2670	0.0370	1,919.4775
0.0927	0.0394	0.0334	0.0055	0.0428	0.2670	0.0370	2,052.6713
0.0911	0.0394	0.0334	0.0055	0.0428	0.2670	0.0370	2,150.7352
0.0815	0.0277	0.0334	0.0055	0.0301	0.2670	0.0370	2,062.1749
0.0815	0.0277	0.0334	0.0055	0.0301	0.2670	0.0370	2,075.5168
0.0815	0.0277	0.0334	0.0055	0.0301	0.2670	0.0370	2,141.2898
0.0815	0.0277	0.0334	0.0055	0.0301	0.2670	0.0370	2,216.6583
0.2426	0.0358	0.0211	0.0029	0.0390	0.1687	0.0193	568,025.3894
5.0116	1.3920	0.0247	0.0034	1.5130	0.1979	0.0227	4,942.1828
4.3141	1.4096	0.0233	0.0032	1.5321	0.1862	0.0214	3,627.9954
3.7585	0.6850	0.0259	0.0035	0.7446	0.2074	0.0232	6,275.7523
3.5418	0.6654	0.0232	0.0032	0.7232	0.1859	0.0212	6,265.0437
3.3241	0.6603	0.0229	0.0031	0.7177	0.1831	0.0209	8,711.8526
3.1353	0.6606	0.0237	0.0032	0.7180	0.1900	0.0214	11,525.8675
3.1312	0.6365	0.0205	0.0028	0.6918	0.1637	0.0186	10,917.4576
2.1692	0.5790	0.0209	0.0029	0.6294	0.1669	0.0192	10,834.2052
2.0835	0.5734	0.0209	0.0028	0.6232	0.1668	0.0188	13,132.0285
1.9977	0.5804	0.0219	0.0030	0.6309	0.1754	0.0198	18,023.6820
1.9380	0.5778	0.0213	0.0029	0.6280	0.1703	0.0194	19,660.6606
0.4578	0.0245	0.0234	0.0031	0.0266	0.1869	0.0210	12,118.1944
0.4411	0.0228	0.0189	0.0026	0.0247	0.1514	0.0173	8,819.2116
0.4147	0.0248	0.0235	0.0032	0.0270	0.1883	0.0216	12,780.7515
0.3510	0.0225	0.0226	0.0031	0.0245	0.1811	0.0207	10,725.5419
0.3040	0.0215	0.0210	0.0029	0.0234	0.1681	0.0193	11,767.0268
0.2700	0.0214	0.0210	0.0029	0.0233	0.1681	0.0193	13,220.5840
0.2419	0.0196	0.0210	0.0029	0.0213	0.1681	0.0193	14,674.2730
0.2220	0.0195	0.0210	0.0029	0.0212	0.1681	0.0193	16,380.7470
0.2060	0.0194	0.0210	0.0029	0.0211	0.1681	0.0193	18,288.5460
0.1930	0.0194	0.0210	0.0029	0.0211	0.1681	0.0193	20,393.3030
0.1821	0.0194	0.0210	0.0029	0.0210	0.1681	0.0193	22,205.7170
0.1728	0.0193	0.0210	0.0029	0.0210	0.1681	0.0193	24,171.1660
0.1649	0.0193	0.0210	0.0029	0.0210	0.1681	0.0193	26,294.5050
0.1581	0.0193	0.0210	0.0029	0.0210	0.1681	0.0193	31,966.4120

3,229.5331	340.8372	254.6537	9.3232	1.5489	276.7983
2,837.8466	65.1769	16.0208	11.2156	1.8630	17.4140
3,370.8127	74.8003	19.0025	13.3132	2.2087	20.6549
4,021.0219	85.5171	22.7072	15.9027	2.6451	24.6819
1,135.9268	78.7271	25.1427	18.6361	3.0987	27.3291
1,382.9714	90.0261	30.5024	22.6268	3.7586	33.1549
1,638.0058	101.0889	36.1124	26.7994	4.4517	39.2528
1,722.8176	110.5021	37.6434	31.6122	5.2512	40.9169
1,987.6222	123.3102	43.4846	36.7705	6.1080	47.2659
2,299.9297	137.6003	50.3033	42.5481	7.0678	54.6778
2,647.2993	153.3628	57.8873	48.9744	8.1352	62.9212
2,965.4838	166.9196	64.8315	54.8606	9.1130	70.4693
3,311.3204	181.6200	72.3794	61.2584	10.1758	78.6735
3,686.2301	197.5002	80.5614	68.1942	11.3279	87.5672
4,561.8420	239.2607	99.6839	84.3929	14.0187	108.3524
4,990.1580	256.9591	109.0995	92.4673	15.3600	118.5866
5,344.5330	270.3345	116.8338	99.0338	16.4507	126.9935
4,112.1896	257.1904	87.3083	105.3391	17.4981	94.9008
4,138.7855	258.8544	87.8733	106.0205	17.6113	95.5147
4,269.9448	267.0573	90.6580	109.3803	18.1694	98.5414
4,420.2440	276.4569	93.8487	113.2302	18.8089	102.0100
837,472.4947	144,623.0513	21,366.1115	12,569.8662	1,726.5516	23,224.0983
7,777.0273	1,971.8734	547.7007	9.7336	1.3373	595.3285
7,102.0930	1,556.9791	508.7171	8.3990	1.1585	552.9537
10,215.4823	2,247.8456	409.6915	15.5078	2.0854	445.3186
7,995.0681	2,614.1887	491.0975	17.1561	2.3453	533.8032
11,561.7712	3,595.4838	714.2031	24.7494	3.3925	776.3099
15,521.1126	4,578.6814	964.6730	34.6761	4.6831	1,048.5610
16,226.1179	4,946.7749	1,005.4814	32.3233	4.4169	1,092.9187
17,743.5628	4,549.3545	1,214.3107	43.7574	6.0282	1,319.9071
21,336.8065	5,298.0077	1,457.9680	53.0334	7.1731	1,584.7518
29,098.2512	6,989.2192	2,030.6216	76.7134	10.3945	2,207.2017
33,553.3749	7,808.2073	2,327.9107	85.7700	11.7482	2,530.3463
24,633.8050	2,388.1986	127.8927	121.8586	16.4009	139.0142
25,338.1960	2,451.4536	126.4678	105.1644	14.4515	137.4654
30,331.2570	2,626.0112	157.3538	149.0401	20.4808	171.0371
10,980.3680	2,386.1472	153.2677	153.9341	21.1472	166.5956
14,607.3680	2,796.5834	198.0697	193.2868	26.5616	215.2939
17,782.9610	3,086.8103	245.1489	240.2290	33.0124	266.4669
19,971.2330	3,387.8437	274.0275	294.2855	40.4409	297.8569
23,553.0820	3,727.8910	326.9775	352.8909	48.4945	355.4117
27,642.3070	4,105.3553	387.1281	418.7125	57.5397	420.7935
32,200.5550	4,519.8065	454.2594	492.1919	67.6374	493.7621
36,443.1090	4,863.3328	517.2703	561.2946	77.1334	562.2515
37,329.2720	5,235.2931	585.8179	636.4745	87.4647	636.7590
40,760.6900	5,636.2248	660.2223	718.0880	98.6800	717.6349
49,548.3750	6,785.4113	828.5584	902.0213	123.9563	900.6099

74.5860	10.3262
89.7247	12.4203
106.5055	14.7247
127.2214	17.6343
149.0886	20.6579
181.0139	25.0573
214.3947	29.6782
252.8985	35.0080
294.1631	40.7203
340.3846	47.1186
391.7950	54.2353
438.8838	60.7538
490.0677	67.8390
545.5539	75.5198
675.1424	93.4585
739.7382	102.4003
792.2706	109.6722
842.7130	116.6548
848.1643	117.4093
875.0425	121.1300
905.8413	125.3934
100,558.9087	11,510.4016
77.8685	8.9152
67.1923	7.7233
124.0622	13.9026
137.2486	15.6355
197.9951	22.6165
277.4091	31.2211
258.5857	29.4463
350.0583	40.1882
424.2662	47.8209
613.7072	69.2969
686.1590	78.3218
974.8689	109.3396
841.3161	96.3436
1,192.3221	136.5392
1,231.4735	140.9823
1,546.2930	177.0782
1,921.8272	220.0835
2,354.2757	269.6069
2,823.1254	323.2983
3,349.7039	383.6005
3,937.5454	450.9176
4,490.3529	514.2253
5,091.7893	583.1018
5,744.6954	657.8707
7,216.1718	826.3794

2.52.2021	diesel	SU S-haul Truck	2021	47,367	0.7202	1.0538
2.52.2022	diesel	SU S-haul Truck	2022	51,288	0.7011	1.0098
2.52.2023	diesel	SU S-haul Truck	2023	54,869	0.6196	0.7358
2.52.2024	diesel	SU S-haul Truck	2024	55,309	0.6196	0.7358
2.52.2025	diesel	SU S-haul Truck	2025	57,122	0.6196	0.7358
2.52.2026	diesel	SU S-haul Truck	2026	59,011	0.6196	0.7358
2.53.53	diesel	SU L-haul Truck	3.53	51,582	0.7831	1.2821
2.53.1996	diesel	SU L-haul Truck	1996	58	7.6180	17.5917
2.53.1997	diesel	SU L-haul Truck	1997	40	7.7284	17.5094
2.53.1998	diesel	SU L-haul Truck	1998	61	6.9113	15.6653
2.53.1999	diesel	SU L-haul Truck	1999	54	6.2729	9.2737
2.53.2000	diesel	SU L-haul Truck	2000	50	6.3897	9.7166
2.53.2001	diesel	SU L-haul Truck	2001	121	6.0488	9.3960
2.53.2002	diesel	SU L-haul Truck	2002	167	6.0859	9.5555
2.53.2003	diesel	SU L-haul Truck	2003	200	4.4764	7.7580
2.53.2004	diesel	SU L-haul Truck	2004	232	4.5023	7.7415
2.53.2005	diesel	SU L-haul Truck	2005	269	4.4985	7.7057
2.53.2006	diesel	SU L-haul Truck	2006	310	4.3726	7.7160
2.53.2007	diesel	SU L-haul Truck	2007	359	1.7940	4.5674
2.53.2008	diesel	SU L-haul Truck	2008	416	1.3786	4.2966
2.53.2009	diesel	SU L-haul Truck	2009	478	1.6344	4.6716
2.53.2010	diesel	SU L-haul Truck	2010	547	1.2664	1.4073
2.53.2011	diesel	SU L-haul Truck	2011	733	1.0482	1.3935
2.53.2012	diesel	SU L-haul Truck	2012	931	0.9453	1.3783
2.53.2013	diesel	SU L-haul Truck	2013	1,159	0.8537	1.2609
2.53.2014	diesel	SU L-haul Truck	2014	1,407	0.7970	1.2492
2.53.2015	diesel	SU L-haul Truck	2015	1,685	0.7528	1.2427
2.53.2016	diesel	SU L-haul Truck	2016	1,997	0.7172	1.2375
2.53.2017	diesel	SU L-haul Truck	2017	2,292	0.6880	1.2332
2.53.2018	diesel	SU L-haul Truck	2018	2,613	0.6635	1.1319
2.53.2019	diesel	SU L-haul Truck	2019	2,962	0.6427	1.1032
2.53.2020	diesel	SU L-haul Truck	2020	3,738	0.6249	1.0749
2.53.2021	diesel	SU L-haul Truck	2021	4,187	0.6061	0.9901
2.53.2022	diesel	SU L-haul Truck	2022	4,507	0.5925	0.9568
2.53.2023	diesel	SU L-haul Truck	2023	4,842	0.5198	0.6937
2.53.2024	diesel	SU L-haul Truck	2024	4,871	0.5198	0.6937
2.53.2025	diesel	SU L-haul Truck	2025	5,091	0.5198	0.6937
2.53.2026	diesel	SU L-haul Truck	2026	5,205	0.5198	0.6937
2.54.54	diesel	Motor Home	4.54	13,926	1.7850	3.9232
2.54.1996	diesel	Motor Home	1996	896	5.4616	19.6065
2.54.1997	diesel	Motor Home	1997	92	5.4617	19.6065
2.54.1998	diesel	Motor Home	1998	132	5.4616	17.4815
2.54.1999	diesel	Motor Home	1999	164	5.4617	9.6147
2.54.2000	diesel	Motor Home	2000	206	5.4617	9.6146
2.54.2001	diesel	Motor Home	2001	170	5.4617	9.6147
2.54.2002	diesel	Motor Home	2002	237	5.4618	9.6148
2.54.2003	diesel	Motor Home	2003	195	4.1304	8.3067

0.1516	0.0190	0.0210	0.0029	0.0207	0.1681	0.0193	34,115.0630
0.1463	0.0190	0.0210	0.0029	0.0207	0.1681	0.0193	35,957.2900
0.1316	0.0123	0.0210	0.0029	0.0133	0.1681	0.0193	33,998.7110
0.1316	0.0123	0.0210	0.0029	0.0133	0.1681	0.0193	34,271.5000
0.1316	0.0123	0.0210	0.0029	0.0133	0.1681	0.0193	35,395.0040
0.1316	0.0123	0.0210	0.0029	0.0133	0.1681	0.0193	36,565.1140
0.1633	0.0350	0.0235	0.0032	0.0381	0.1882	0.0216	40,396.0010
2.4102	1.2431	0.0284	0.0039	1.3512	0.2274	0.0257	439.4671
2.2992	1.2251	0.0295	0.0040	1.3317	0.2361	0.0266	309.9452
2.4448	0.6397	0.0256	0.0034	0.6953	0.2046	0.0227	421.0018
2.5677	0.6066	0.0211	0.0028	0.6593	0.1690	0.0190	340.0170
2.3878	0.6328	0.0241	0.0033	0.6879	0.1927	0.0218	320.9734
2.4524	0.6132	0.0215	0.0029	0.6666	0.1723	0.0196	733.6553
2.3670	0.6232	0.0227	0.0031	0.6774	0.1816	0.0207	1,017.1138
1.5841	0.5706	0.0233	0.0032	0.6203	0.1867	0.0215	894.0471
1.5678	0.5623	0.0231	0.0031	0.6112	0.1845	0.0209	1,044.1767
1.5324	0.5736	0.0244	0.0033	0.6234	0.1955	0.0222	1,208.0772
1.5144	0.5725	0.0240	0.0033	0.6223	0.1916	0.0220	1,355.5815
0.2806	0.0240	0.0259	0.0035	0.0261	0.2071	0.0235	644.5879
0.2784	0.0219	0.0208	0.0029	0.0238	0.1667	0.0191	573.9623
0.2649	0.0246	0.0262	0.0036	0.0267	0.2099	0.0243	781.3172
0.2146	0.0223	0.0251	0.0035	0.0242	0.2010	0.0233	692.9498
0.1862	0.0213	0.0235	0.0032	0.0231	0.1878	0.0216	768.3480
0.1666	0.0212	0.0235	0.0032	0.0230	0.1878	0.0216	880.0113
0.1497	0.0192	0.0235	0.0032	0.0209	0.1878	0.0216	989.3264
0.1390	0.0192	0.0235	0.0032	0.0208	0.1878	0.0216	1,121.1245
0.1306	0.0191	0.0235	0.0032	0.0208	0.1878	0.0216	1,268.7110
0.1238	0.0191	0.0235	0.0032	0.0208	0.1878	0.0216	1,432.1289
0.1183	0.0191	0.0235	0.0032	0.0208	0.1878	0.0216	1,576.8643
0.1136	0.0191	0.0235	0.0032	0.0208	0.1878	0.0216	1,733.9824
0.1097	0.0191	0.0235	0.0032	0.0207	0.1878	0.0216	1,903.9946
0.1063	0.0191	0.0235	0.0032	0.0207	0.1878	0.0216	2,335.6230
0.1028	0.0188	0.0235	0.0032	0.0204	0.1878	0.0216	2,537.5566
0.1002	0.0188	0.0235	0.0032	0.0204	0.1878	0.0216	2,670.6550
0.0884	0.0123	0.0235	0.0032	0.0134	0.1878	0.0216	2,516.7755
0.0884	0.0123	0.0235	0.0032	0.0134	0.1878	0.0216	2,532.2208
0.0884	0.0123	0.0235	0.0032	0.0134	0.1878	0.0216	2,646.3655
0.0884	0.0123	0.0235	0.0032	0.0134	0.1878	0.0216	2,705.4402
0.5651	0.2050	0.0174	0.0025	0.2228	0.1395	0.0163	24,858.8133
2.3452	1.5078	0.0174	0.0025	1.6389	0.1394	0.0163	4,895.1224
2.3452	1.5078	0.0174	0.0025	1.6389	0.1394	0.0163	501.3152
2.3451	0.6041	0.0174	0.0025	0.6566	0.1394	0.0163	719.7097
2.3451	0.6041	0.0174	0.0025	0.6566	0.1395	0.0163	894.7877
2.3452	0.6041	0.0174	0.0025	0.6566	0.1394	0.0163	1,126.9738
2.3451	0.6041	0.0174	0.0025	0.6566	0.1395	0.0163	926.5631
2.3451	0.6041	0.0174	0.0025	0.6567	0.1395	0.0163	1,295.3711
1.4015	0.5452	0.0174	0.0025	0.5926	0.1394	0.0163	803.7844

49,913.6700	7,182.4851	901.1995	995.3351	136.7796	979.5673
51,791.1740	7,505.1219	975.0761	1,077.7195	148.1011	1,059.8686
40,371.2210	7,220.7246	672.7964	1,152.9705	158.4420	731.3007
40,695.1900	7,278.6639	678.1938	1,162.2225	159.7133	737.1689
42,029.2190	7,517.2760	700.4258	1,200.3223	164.9491	761.3355
43,418.7750	7,765.8013	723.5828	1,240.0048	170.4023	786.5043
66,135.3079	8,423.1855	1,807.2610	1,213.5787	167.3672	1,964.4207
1,014.8369	139.0398	71.7136	1.6401	0.2226	77.9497
702.2121	92.2080	49.1336	1.1838	0.1603	53.4063
954.2475	148.9256	38.9655	1.5581	0.2074	42.3540
502.6720	139.1818	32.8802	1.1450	0.1544	35.7393
488.0971	119.9485	31.7888	1.2102	0.1642	34.5532
1,139.6429	297.4473	74.3784	2.6129	0.3573	80.8464
1,596.9722	395.5774	104.1521	3.7935	0.5197	113.2092
1,549.4502	316.3874	113.9681	4.6607	0.6455	123.8789
1,795.4006	363.5919	130.4056	5.3483	0.7258	141.7457
2,069.3636	411.5310	154.0280	6.5615	0.8939	167.4223
2,392.0999	469.4818	177.4885	7.4251	1.0213	192.9232
1,641.0673	100.8237	8.6342	9.3028	1.2641	9.3851
1,788.7944	115.8901	9.1324	8.6758	1.1933	9.9265
2,233.2743	126.6415	11.7537	12.5441	1.7437	12.7758
770.0129	117.4114	12.1845	13.7489	1.9083	13.2440
1,021.4720	136.4585	15.5812	17.2111	2.3743	16.9361
1,283.1961	155.0909	19.7391	21.8588	3.0155	21.4557
1,461.1469	173.5217	22.2814	27.2081	3.7534	24.2190
1,757.2911	195.5523	26.9535	33.0289	4.5564	29.2974
2,094.4271	220.1272	32.2543	39.5717	5.4590	35.0591
2,470.9895	247.3014	38.1778	46.8842	6.4678	41.4977
2,826.4867	271.1253	43.7882	53.8166	7.4241	47.5960
2,958.0449	296.9792	49.8935	61.3610	8.4649	54.2322
3,267.9626	324.9376	56.5238	69.5543	9.5952	61.4390
4,017.8243	397.3019	71.2837	87.7597	12.1067	77.4826
4,145.2595	430.5195	78.5872	98.3001	13.5607	85.4211
4,312.6711	451.8470	84.5757	105.8305	14.5996	91.9305
3,358.7671	427.8997	59.7722	113.6776	15.6821	64.9701
3,379.3711	430.5261	60.1391	114.3752	15.7783	65.3687
3,531.7047	449.9326	62.8499	119.5308	16.4896	68.3154
3,610.5493	459.9776	64.2531	122.1994	16.8577	69.8405
54,635.6162	7,870.0031	2,854.8913	242.7507	34.1322	3,103.1522
17,572.9254	2,101.9669	1,351.4352	15.6219	2.1965	1,468.9556
1,799.6320	215.2566	138.3974	1.6000	0.2250	150.4324
2,303.6317	309.0282	79.6066	2.2970	0.3230	86.5292
1,575.1578	384.1972	98.9706	2.8558	0.4015	107.5769
1,983.8852	483.9041	124.6520	3.5968	0.5057	135.4919
1,631.1013	397.8452	102.4856	2.9572	0.4158	111.3977
2,280.3402	556.1832	143.2784	4.1344	0.5813	155.7379
1,616.5102	272.7331	106.0969	3.3921	0.4770	115.3229

7,962.6828	911.8690
8,621.7602	987.3452
9,223.7661	1,056.2841
9,297.7732	1,064.7613
9,602.5775	1,099.6666
9,920.0362	1,136.0203
9,708.6297	1,115.7865
13.1207	1.4840
9.4706	1.0686
12.4645	1.3825
9.1602	1.0293
9.6812	1.0949
20.9033	2.3818
30.3477	3.4648
37.2857	4.3034
42.7866	4.8389
52.4920	5.9595
59.4006	6.8089
74.4222	8.4277
69.4067	7.9553
100.3526	11.6245
109.9911	12.7218
137.6886	15.8288
174.8704	20.1032
217.6655	25.0231
264.2307	30.3762
316.5738	36.3936
375.0736	43.1188
430.5340	49.4946
490.8874	56.4328
556.4341	63.9683
702.0763	80.7115
786.4003	90.4053
846.6442	97.3310
909.4206	104.5478
915.0023	105.1894
956.2465	109.9310
977.5954	112.3851
1,942.0056	227.5489
124.9756	14.6435
12.7997	1.4997
18.3757	2.1532
22.8464	2.6770
28.7741	3.3715
23.6574	2.7720
33.0754	3.8755
27.1370	3.1797

2.54.2004	diesel	Motor Home	2004	336	4.1304	8.3066
2.54.2005	diesel	Motor Home	2005	396	4.1304	8.3066
2.54.2006	diesel	Motor Home	2006	248	4.1304	8.3067
2.54.2007	diesel	Motor Home	2007	354	1.2218	4.2695
2.54.2008	diesel	Motor Home	2008	345	1.2218	4.2695
2.54.2009	diesel	Motor Home	2009	511	1.2218	4.2695
2.54.2010	diesel	Motor Home	2010	348	0.8923	1.5236
2.54.2011	diesel	Motor Home	2011	574	0.8923	1.5236
2.54.2012	diesel	Motor Home	2012	351	0.8923	1.5236
2.54.2013	diesel	Motor Home	2013	323	0.8747	1.4094
2.54.2014	diesel	Motor Home	2014	79	0.8735	1.3983
2.54.2015	diesel	Motor Home	2015	138	0.8735	1.3983
2.54.2016	diesel	Motor Home	2016	291	0.8735	1.3983
2.54.2017	diesel	Motor Home	2017	188	0.8735	1.3983
2.54.2018	diesel	Motor Home	2018	404	0.8735	1.2890
2.54.2019	diesel	Motor Home	2019	230	0.8735	1.2601
2.54.2020	diesel	Motor Home	2020	932	0.8735	1.2311
2.54.2021	diesel	Motor Home	2021	947	0.8698	1.1386
2.54.2022	diesel	Motor Home	2022	950	0.8698	1.1032
2.54.2023	diesel	Motor Home	2023	952	0.8034	0.8003
2.54.2024	diesel	Motor Home	2024	951	0.8034	0.8003
2.54.2025	diesel	Motor Home	2025	976	0.8034	0.8003
2.54.2026	diesel	Motor Home	2026	1,009	0.8034	0.8003
2.61.61	diesel	Comb S-haul Truck	1.61	393,034	0.8131	2.2086
2.61.1996	diesel	Comb S-haul Truck	1996	211	11.5887	31.4986
2.61.1997	diesel	Comb S-haul Truck	1997	305	10.4839	31.4985
2.61.1998	diesel	Comb S-haul Truck	1998	435	9.7541	27.7772
2.61.1999	diesel	Comb S-haul Truck	1999	590	9.2882	20.8656
2.61.2000	diesel	Comb S-haul Truck	2000	776	8.9504	20.7743
2.61.2001	diesel	Comb S-haul Truck	2001	1,005	8.7411	20.9025
2.61.2002	diesel	Comb S-haul Truck	2002	1,258	8.3602	19.9777
2.61.2003	diesel	Comb S-haul Truck	2003	1,534	4.7682	11.6976
2.61.2004	diesel	Comb S-haul Truck	2004	1,794	4.7096	11.6967
2.61.2005	diesel	Comb S-haul Truck	2005	2,080	4.5792	11.6971
2.61.2006	diesel	Comb S-haul Truck	2006	2,418	4.4762	11.6975
2.61.2007	diesel	Comb S-haul Truck	2007	2,820	1.6469	7.9253
2.61.2008	diesel	Comb S-haul Truck	2008	3,274	1.5928	7.7617
2.61.2009	diesel	Comb S-haul Truck	2009	3,779	1.5180	8.1293
2.61.2010	diesel	Comb S-haul Truck	2010	4,346	1.2162	2.0633
2.61.2011	diesel	Comb S-haul Truck	2011	6,160	1.0301	2.0632
2.61.2012	diesel	Comb S-haul Truck	2012	8,077	0.9165	2.0632
2.61.2013	diesel	Comb S-haul Truck	2013	10,143	0.8147	1.8396
2.61.2014	diesel	Comb S-haul Truck	2014	12,385	0.7572	1.7974
2.61.2015	diesel	Comb S-haul Truck	2015	14,824	0.7160	1.7974
2.61.2016	diesel	Comb S-haul Truck	2016	17,391	0.6838	1.7974
2.61.2017	diesel	Comb S-haul Truck	2017	19,834	0.6581	1.7974
2.61.2018	diesel	Comb S-haul Truck	2018	22,405	0.6370	1.7974

1.4015	0.5452	0.0174	0.0025	0.5926	0.1394	0.0163	1,386.6166
1.4015	0.5452	0.0174	0.0025	0.5926	0.1395	0.0163	1,636.0776
1.4015	0.5452	0.0174	0.0025	0.5926	0.1395	0.0163	1,024.7141
0.2148	0.0216	0.0174	0.0025	0.0235	0.1395	0.0163	432.8170
0.2148	0.0216	0.0174	0.0025	0.0235	0.1395	0.0163	421.5219
0.2148	0.0216	0.0174	0.0025	0.0235	0.1395	0.0163	624.2625
0.1640	0.0199	0.0174	0.0025	0.0216	0.1395	0.0163	310.8419
0.1640	0.0199	0.0174	0.0025	0.0216	0.1395	0.0163	512.5006
0.1640	0.0199	0.0174	0.0025	0.0216	0.1395	0.0163	312.9827
0.1613	0.0182	0.0174	0.0025	0.0197	0.1395	0.0163	282.8763
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	68.9256
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	120.3773
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	254.1108
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	164.2842
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	353.3014
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	201.1554
0.1613	0.0181	0.0174	0.0025	0.0196	0.1395	0.0163	813.9442
0.1607	0.0177	0.0174	0.0025	0.0193	0.1395	0.0163	823.9917
0.1607	0.0177	0.0174	0.0025	0.0193	0.1395	0.0163	826.1892
0.1504	0.0113	0.0174	0.0025	0.0123	0.1395	0.0163	764.5944
0.1504	0.0113	0.0174	0.0025	0.0123	0.1395	0.0163	764.3828
0.1504	0.0113	0.0174	0.0025	0.0123	0.1395	0.0163	784.0179
0.1504	0.0113	0.0174	0.0025	0.0123	0.1395	0.0163	810.6999
0.1370	0.0596	0.0313	0.0049	0.0647	0.2504	0.0327	319,575.9474
2.6023	1.5267	0.0326	0.0052	1.6594	0.2612	0.0347	2,443.2332
2.1865	1.4873	0.0335	0.0054	1.6167	0.2676	0.0359	3,196.9325
2.0264	0.9872	0.0330	0.0053	1.0731	0.2639	0.0352	4,244.8820
1.9093	0.9819	0.0328	0.0052	1.0673	0.2625	0.0349	5,479.0649
1.8351	0.9759	0.0326	0.0052	1.0607	0.2608	0.0346	6,946.3913
1.7391	0.9822	0.0329	0.0053	1.0676	0.2632	0.0351	8,782.8742
1.8779	0.9307	0.0307	0.0048	1.0117	0.2457	0.0319	10,517.5908
1.4274	0.8581	0.0315	0.0050	0.9327	0.2523	0.0331	7,314.1284
1.4109	0.8340	0.0304	0.0047	0.9065	0.2433	0.0315	8,448.3341
1.3724	0.8462	0.0310	0.0048	0.9198	0.2481	0.0323	9,523.3731
1.3421	0.8538	0.0314	0.0049	0.9280	0.2510	0.0329	10,822.3287
0.2310	0.0434	0.0313	0.0049	0.0471	0.2502	0.0327	4,644.7991
0.2236	0.0421	0.0305	0.0047	0.0458	0.2437	0.0315	5,214.8688
0.2131	0.0449	0.0323	0.0051	0.0488	0.2583	0.0342	5,737.1026
0.1703	0.0420	0.0320	0.0051	0.0456	0.2559	0.0337	5,286.1619
0.1445	0.0409	0.0313	0.0049	0.0444	0.2502	0.0327	6,345.1187
0.1288	0.0408	0.0313	0.0049	0.0444	0.2502	0.0327	7,402.1147
0.1146	0.0361	0.0313	0.0049	0.0392	0.2502	0.0327	8,263.2456
0.1070	0.0354	0.0313	0.0049	0.0385	0.2502	0.0327	9,377.3030
0.1013	0.0354	0.0313	0.0049	0.0385	0.2502	0.0327	10,613.7040
0.0969	0.0354	0.0313	0.0049	0.0385	0.2502	0.0327	11,892.7370
0.0933	0.0354	0.0313	0.0049	0.0384	0.2502	0.0327	13,052.6910
0.0904	0.0354	0.0313	0.0049	0.0384	0.2502	0.0327	14,271.8130

2,788.6453	470.4922	183.0290	5.8518	0.8228	198.9454
3,290.3287	555.1330	215.9576	6.9048	0.9709	234.7373
2,060.8269	347.6959	135.2604	4.3246	0.6081	147.0225
1,512.5074	76.0961	7.6691	6.1753	0.8683	8.3360
1,473.0155	74.1092	7.4689	6.0141	0.8456	8.1184
2,181.5079	109.7556	11.0612	8.9066	1.2523	12.0231
530.7358	57.1337	6.9219	6.0723	0.8538	7.5238
875.0627	94.2002	11.4124	10.0118	1.4077	12.4049
534.4003	57.5278	6.9696	6.1142	0.8597	7.5756
455.7741	52.1627	5.8711	5.6371	0.7926	6.3816
110.3377	12.7251	1.4245	1.3755	0.1934	1.5484
192.7024	22.2241	2.4879	2.4023	0.3378	2.7042
406.7868	46.9141	5.2518	5.0711	0.7130	5.7085
262.9899	30.3302	3.3953	3.2785	0.4610	3.6906
521.3872	65.2267	7.3017	7.0506	0.9914	7.9367
290.1813	37.1373	4.1573	4.0143	0.5644	4.5188
1,147.1706	150.2707	16.8219	16.2434	2.2839	18.2848
1,078.5422	152.2287	16.7816	16.5124	2.3217	18.2409
1,047.8754	152.6346	16.8263	16.5564	2.3279	18.2896
761.6470	143.1651	10.7453	16.5902	2.3327	11.6797
761.4362	143.1255	10.7423	16.5857	2.3320	11.6765
780.9965	146.8022	11.0183	17.0117	2.3920	11.9764
807.5748	151.7981	11.3932	17.5907	2.4734	12.3840
868,060.9359	53,849.4834	23,405.5613	12,300.4399	1,930.1596	25,440.9064
6,640.8222	548.6442	321.8708	6.8823	1.0969	349.8606
9,605.1045	666.7615	453.5449	10.2013	1.6400	492.9850
12,088.4033	881.8813	429.6347	14.3552	2.2964	466.9952
12,308.5763	1,126.2724	579.2243	19.3590	3.0912	629.5939
16,122.9919	1,424.2015	757.3828	25.3016	4.0306	823.2447
21,002.3253	1,747.4337	986.8750	33.0621	5.2843	1,072.6932
25,133.1560	2,362.5388	1,170.9223	38.6356	6.0187	1,272.7442
17,943.3694	2,189.6029	1,316.2176	48.3730	7.6124	1,430.6770
20,982.3834	2,530.8927	1,496.0751	54.5511	8.4654	1,626.1728
24,326.7404	2,854.2538	1,759.9479	64.4843	10.0828	1,912.9936
28,281.3041	3,244.9112	2,064.2095	75.8604	11.9155	2,243.7134
22,352.4540	651.5458	122.2709	88.1964	13.8354	132.9037
25,411.3070	731.9853	137.8176	99.7159	15.4837	149.8023
30,724.3400	805.5261	169.5407	122.0213	19.3700	184.2840
8,967.7200	740.0114	182.3896	139.0343	21.9963	198.2501
12,708.2420	890.1891	251.8225	192.6581	30.2247	273.7209
16,663.2480	1,040.2815	329.9054	252.6163	39.6311	358.5940
18,658.3270	1,162.4248	365.9995	317.2347	49.7687	397.8267
22,260.3780	1,325.2363	438.4704	387.3738	60.7723	476.5997
26,645.0370	1,501.7946	524.6429	463.6745	72.7426	570.2658
31,258.3220	1,684.5389	615.3049	543.9551	85.3372	668.8116
35,649.4040	1,850.5299	701.5824	620.3696	97.3253	762.5918
40,270.4700	2,024.9966	792.3768	700.7848	109.9411	861.2827

46.8146	5.4854
55.2385	6.4724
34.5969	4.0538
49.4022	5.7886
48.1126	5.6374
71.2528	8.3488
48.5788	5.6921
80.0940	9.3848
48.9133	5.7313
45.0971	5.2841
11.0041	1.2894
19.2184	2.2519
40.5691	4.7536
26.2281	3.0732
56.4050	6.6091
32.1145	3.7629
129.9469	15.2262
132.0993	15.4784
132.4515	15.5196
132.7221	15.5513
132.6853	15.5470
136.0938	15.9464
140.7253	16.4891
98,403.5389	12,867.7933
55.0586	7.3126
81.6103	10.9331
114.8419	15.3094
154.8720	20.6084
202.4127	26.8707
264.4974	35.2291
309.0849	40.1252
386.9844	50.7497
436.4084	56.4360
515.8748	67.2193
606.8826	79.4368
705.5722	92.2361
797.7273	103.2251
976.1700	129.1340
1,112.2749	146.6425
1,541.2641	201.4989
2,020.9286	264.2082
2,537.8854	331.7931
3,098.9962	405.1511
3,709.3943	484.9531
4,351.6408	568.9171
4,962.9593	648.8387
5,606.2802	732.9448

2.61.2019	diesel	Comb S-haul Truck	2019	25,098	0.6194	1.7974
2.61.2020	diesel	Comb S-haul Truck	2020	25,878	0.6045	1.7974
2.61.2021	diesel	Comb S-haul Truck	2021	28,993	0.5885	1.7710
2.61.2022	diesel	Comb S-haul Truck	2022	31,729	0.5774	1.7710
2.61.2023	diesel	Comb S-haul Truck	2023	34,420	0.5100	1.2746
2.61.2024	diesel	Comb S-haul Truck	2024	34,963	0.5100	1.2746
2.61.2025	diesel	Comb S-haul Truck	2025	36,276	0.5100	1.2746
2.61.2026	diesel	Comb S-haul Truck	2026	37,834	0.5100	1.2746
2.62.62	diesel	Comb L-haul Truck	2.62	936,629	0.9001	3.0934
2.62.1996	diesel	Comb L-haul Truck	1996	776	8.8006	33.0777
2.62.1997	diesel	Comb L-haul Truck	1997	1,187	8.4511	33.0818
2.62.1998	diesel	Comb L-haul Truck	1998	1,741	8.2230	29.1265
2.62.1999	diesel	Comb L-haul Truck	1999	2,402	8.1413	22.6627
2.62.2000	diesel	Comb L-haul Truck	2000	3,200	8.0611	22.6941
2.62.2001	diesel	Comb L-haul Truck	2001	4,180	7.9661	22.5589
2.62.2002	diesel	Comb L-haul Truck	2002	5,270	7.8994	22.4802
2.62.2003	diesel	Comb L-haul Truck	2003	6,460	3.8331	12.4801
2.62.2004	diesel	Comb L-haul Truck	2004	7,589	3.8148	12.4758
2.62.2005	diesel	Comb L-haul Truck	2005	8,830	3.7826	12.4782
2.62.2006	diesel	Comb L-haul Truck	2006	10,297	3.7574	12.4796
2.62.2007	diesel	Comb L-haul Truck	2007	12,044	1.0656	9.0959
2.62.2008	diesel	Comb L-haul Truck	2008	14,013	1.0508	9.0543
2.62.2009	diesel	Comb L-haul Truck	2009	16,208	1.0348	9.1409
2.62.2010	diesel	Comb L-haul Truck	2010	18,672	0.7577	2.4040
2.62.2011	diesel	Comb L-haul Truck	2011	22,320	0.7379	2.4025
2.62.2012	diesel	Comb L-haul Truck	2012	25,973	0.7220	2.4026
2.62.2013	diesel	Comb L-haul Truck	2013	29,840	0.6836	2.1722
2.62.2014	diesel	Comb L-haul Truck	2014	34,004	0.6683	2.1012
2.62.2015	diesel	Comb L-haul Truck	2015	38,511	0.6589	2.1012
2.62.2016	diesel	Comb L-haul Truck	2016	43,173	0.6509	2.1012
2.62.2017	diesel	Comb L-haul Truck	2017	47,405	0.6438	2.1012
2.62.2018	diesel	Comb L-haul Truck	2018	51,853	0.6376	2.1012
2.62.2019	diesel	Comb L-haul Truck	2019	56,498	0.6322	2.1012
2.62.2020	diesel	Comb L-haul Truck	2020	55,624	0.6273	2.1012
2.62.2021	diesel	Comb L-haul Truck	2021	61,005	0.6223	2.0966
2.62.2022	diesel	Comb L-haul Truck	2022	65,547	0.6184	2.0966
2.62.2023	diesel	Comb L-haul Truck	2023	70,039	0.5577	1.5925
2.62.2024	diesel	Comb L-haul Truck	2024	71,226	0.5577	1.5925
2.62.2025	diesel	Comb L-haul Truck	2025	73,810	0.5577	1.5925
2.62.2026	diesel	Comb L-haul Truck	2026	76,932	0.5577	1.5925
3.62.3	CNG	Comb L-haul Truck	62.3	11,203	5.7236	1.8543
3.42.42	CNG	Transit Bus	2.42	11,203	5.7236	1.8543
3.42.1996	CNG	Transit Bus	1996	32	22.4525	12.9823
3.42.1997	CNG	Transit Bus	1997	55	22.4405	12.9823
3.42.1998	CNG	Transit Bus	1998	55	22.4281	12.9823
3.42.1999	CNG	Transit Bus	1999	49	22.4163	12.9823
3.42.2000	CNG	Transit Bus	2000	39	22.4054	12.9822

0.0879	0.0354	0.0313	0.0049	0.0384	0.2502	0.0327	15,544.9890
0.0859	0.0354	0.0313	0.0049	0.0384	0.2502	0.0327	15,641.9160
0.0837	0.0350	0.0313	0.0049	0.0380	0.2502	0.0327	17,061.3460
0.0821	0.0350	0.0313	0.0049	0.0380	0.2502	0.0327	18,319.0370
0.0725	0.0245	0.0313	0.0049	0.0266	0.2502	0.0327	17,555.6430
0.0725	0.0245	0.0313	0.0049	0.0266	0.2502	0.0327	17,832.9250
0.0725	0.0245	0.0313	0.0049	0.0266	0.2502	0.0327	18,502.3660
0.0725	0.0245	0.0313	0.0049	0.0266	0.2502	0.0327	19,296.9330
0.1716	0.0910	0.0341	0.0055	0.0989	0.2728	0.0367	843,089.6646
1.5974	1.5397	0.0339	0.0055	1.6736	0.2712	0.0364	6,827.9777
1.4861	1.5272	0.0342	0.0055	1.6600	0.2734	0.0368	10,031.4106
1.4581	1.0375	0.0339	0.0055	1.1277	0.2715	0.0364	14,318.2220
1.3902	1.0480	0.0344	0.0056	1.1392	0.2751	0.0371	19,556.9944
1.3636	1.0495	0.0345	0.0056	1.1408	0.2756	0.0372	25,791.3563
1.3743	1.0418	0.0341	0.0055	1.1324	0.2732	0.0367	33,297.0434
1.3779	1.0373	0.0340	0.0055	1.1275	0.2717	0.0365	41,627.4791
1.1892	0.9414	0.0342	0.0055	1.0233	0.2732	0.0367	24,763.6410
1.1851	0.9356	0.0339	0.0055	1.0170	0.2712	0.0364	28,951.5392
1.1774	0.9387	0.0340	0.0055	1.0203	0.2723	0.0366	33,401.9582
1.1714	0.9404	0.0341	0.0055	1.0222	0.2729	0.0367	38,691.5538
0.1701	0.0496	0.0341	0.0055	0.0539	0.2728	0.0367	12,834.1710
0.1683	0.0493	0.0339	0.0055	0.0536	0.2713	0.0364	14,723.9630
0.1668	0.0500	0.0343	0.0055	0.0543	0.2744	0.0370	16,772.1670
0.1212	0.0478	0.0342	0.0055	0.0519	0.2740	0.0369	14,147.1830
0.1189	0.0476	0.0341	0.0055	0.0517	0.2728	0.0367	16,468.9850
0.1171	0.0475	0.0341	0.0055	0.0517	0.2728	0.0367	18,753.5170
0.1121	0.0422	0.0341	0.0055	0.0458	0.2728	0.0367	20,398.3390
0.1108	0.0409	0.0341	0.0055	0.0445	0.2728	0.0367	22,725.1780
0.1098	0.0409	0.0341	0.0055	0.0445	0.2728	0.0367	25,376.0910
0.1089	0.0409	0.0341	0.0055	0.0445	0.2728	0.0367	28,099.9150
0.1081	0.0409	0.0341	0.0055	0.0445	0.2728	0.0367	30,520.7350
0.1074	0.0409	0.0341	0.0055	0.0444	0.2728	0.0367	33,063.7270
0.1068	0.0409	0.0341	0.0055	0.0444	0.2728	0.0367	35,716.0930
0.1063	0.0409	0.0341	0.0055	0.0444	0.2728	0.0367	34,891.3480
0.1057	0.0408	0.0341	0.0055	0.0444	0.2728	0.0367	37,965.4830
0.1053	0.0408	0.0341	0.0055	0.0444	0.2728	0.0367	40,532.5480
0.0967	0.0290	0.0341	0.0055	0.0316	0.2728	0.0367	39,058.1130
0.0967	0.0290	0.0341	0.0055	0.0316	0.2728	0.0367	39,720.1900
0.0967	0.0290	0.0341	0.0055	0.0316	0.2728	0.0367	41,161.0650
0.0967	0.0290	0.0341	0.0055	0.0316	0.2728	0.0367	42,901.6780
0.2570	0.0101	0.0206	0.0030	0.0114	0.1645	0.0201	64,121.4140
0.2570	0.0101	0.0206	0.0030	0.0114	0.1645	0.0201	64,121.4140
3.1275	0.2859	0.0206	0.0030	0.3231	0.1645	0.0201	723.3299
3.1272	0.2858	0.0206	0.0030	0.3231	0.1645	0.0201	1,233.9930
3.1269	0.2858	0.0206	0.0030	0.3230	0.1645	0.0201	1,229.9694
3.1265	0.2857	0.0206	0.0030	0.3230	0.1645	0.0201	1,092.0031
3.1262	0.2857	0.0206	0.0030	0.3230	0.1645	0.0201	867.0404

45,110.1900	2,207.2185	887.4648	785.0049	123.1537	964.6380
46,511.7800	2,222.3919	914.9175	809.3946	126.9801	994.4790
51,345.5000	2,425.3067	1,014.7778	906.8242	142.2652	1,103.0218
56,190.5900	2,605.4378	1,110.4246	992.3966	155.6899	1,206.9881
43,871.9700	2,495.2984	841.9342	1,076.5692	168.8951	915.1487
44,564.9200	2,534.7120	855.2330	1,093.5740	171.5627	929.6039
46,237.9300	2,629.8624	887.3370	1,134.6247	178.0030	964.4997
48,223.6300	2,742.8014	925.4439	1,183.3508	185.6474	1,005.9204
2,897,359.9420	160,711.1572	85,230.7044	31,939.3355	5,151.1456	92,642.3571
25,663.5099	1,239.3785	1,194.5564	26.3043	4.2340	1,298.4349
39,267.6945	1,764.0202	1,812.7432	40.5607	6.5462	1,970.3800
50,716.0023	2,538.8602	1,806.4452	59.0838	9.5130	1,963.5339
54,440.4761	3,339.6454	2,517.5706	82.5937	13.3576	2,736.4969
72,609.8373	4,362.8804	3,357.8313	110.2351	17.8402	3,649.8303
94,293.2090	5,744.3672	4,354.5773	142.7289	23.0298	4,733.2574
118,463.9856	7,260.8684	5,466.2178	179.0017	28.8311	5,941.5545
80,627.4869	7,682.6894	6,082.0381	220.6396	35.6027	6,610.9412
94,681.8373	8,994.1353	7,100.6509	257.2323	41.4011	7,718.1137
110,187.2772	10,396.8167	8,289.0297	300.5592	48.4433	9,009.8418
128,506.2279	12,062.0633	9,683.9821	351.3313	56.6727	10,526.0937
109,550.9800	2,048.9506	597.7890	410.6497	66.2262	649.7723
126,873.4200	2,358.5917	691.1530	475.1139	76.4776	751.2557
148,159.0200	2,704.2623	809.6693	555.9560	89.8411	880.0789
44,887.4830	2,263.0673	892.1619	639.4054	103.2684	969.7446
53,625.0990	2,653.5248	1,061.3578	761.0530	122.7381	1,153.6529
62,400.6210	3,041.9750	1,234.9145	885.5946	142.8236	1,342.3021
64,817.2720	3,343.8259	1,257.9689	1,017.4621	164.0905	1,367.3628
71,449.6910	3,769.0780	1,390.8581	1,159.4569	186.9905	1,511.8079
80,917.8750	4,228.3262	1,575.0576	1,313.1054	211.7696	1,712.0241
90,715.0720	4,701.3949	1,765.6482	1,472.0890	237.4101	1,919.1880
99,606.8060	5,125.0305	1,938.6100	1,616.3831	260.6812	2,107.1928
108,952.7060	5,570.1376	2,120.4029	1,768.0418	285.1395	2,304.7934
118,713.1050	6,034.6107	2,310.2626	1,926.4313	310.6842	2,511.1626
116,875.4410	5,910.8634	2,274.4114	1,896.6098	305.8742	2,472.1962
127,900.5870	6,448.0225	2,490.6443	2,080.0956	335.4654	2,707.2302
137,422.8700	6,899.1400	2,675.9950	2,234.9574	360.4416	2,908.6994
111,540.6100	6,769.8011	2,033.5225	2,388.1524	385.1471	2,210.3581
113,430.9900	6,884.5430	2,067.9897	2,428.6192	391.6743	2,247.8198
117,546.1200	7,134.3039	2,143.0132	2,516.7334	405.8839	2,329.3691
122,516.6300	7,435.9830	2,233.6320	2,623.1550	423.0468	2,427.8681
20,773.5066	2,879.1121	113.4204	230.3379	33.8404	128.2139
20,773.5066	2,879.1121	113.4204	230.3379	33.8404	128.2139
418.2371	100.7569	9.2090	0.6624	0.0973	10.4101
713.8895	171.9640	15.7167	1.1306	0.1661	17.7666
711.9571	171.4794	15.6718	1.1276	0.1657	17.7159
632.4261	152.3084	13.9192	1.0016	0.1472	15.7347
502.3853	120.9787	11.0557	0.7956	0.1169	12.4977

6,280.0296	821.0289
6,475.1486	846.5383
7,254.6055	948.4391
7,939.1771	1,037.9368
8,612.5577	1,125.9728
8,748.5873	1,143.7563
9,076.9934	1,186.6934
9,466.8183	1,237.6550
255,514.6717	34,341.1567
210.4347	28.2269
324.4859	43.6414
472.6699	63.4206
660.7495	89.0512
881.8803	118.9353
1,141.8308	153.5324
1,432.0137	192.2082
1,765.1156	237.3527
2,057.8631	276.0088
2,404.4680	322.9568
2,810.6499	377.8196
3,285.1894	441.5103
3,800.9094	509.8524
4,447.6435	598.9442
5,115.2378	688.4613
6,088.4239	818.2591
7,084.7607	952.1617
8,139.6976	1,093.9405
9,275.6604	1,246.6107
10,504.8366	1,411.8067
11,776.7070	1,582.7407
12,931.0625	1,737.8814
14,144.3326	1,900.9402
15,411.4547	2,071.2394
15,172.8702	2,039.1733
16,640.7584	2,236.4548
17,879.6975	2,402.9601
19,105.1934	2,567.6605
19,428.9994	2,611.1752
20,133.8514	2,705.9029
20,985.2240	2,820.3274
1,842.7033	225.6041
1,842.7033	225.6041
5.2990	0.6488
9.0449	1.1074
9.0204	1.1044
8.0128	0.9810
6.3652	0.7793

3.42.2001	CNG	Transit Bus	2001	52	22.3941	12.9823
3.42.2002	CNG	Transit Bus	2002	69	2.8814	5.9903
3.42.2003	CNG	Transit Bus	2003	87	2.8715	5.9903
3.42.2004	CNG	Transit Bus	2004	109	2.8613	5.9903
3.42.2005	CNG	Transit Bus	2005	133	2.8518	5.9903
3.42.2006	CNG	Transit Bus	2006	157	2.8421	5.9903
3.42.2007	CNG	Transit Bus	2007	185	7.2824	1.4382
3.42.2008	CNG	Transit Bus	2008	220	7.2740	1.4382
3.42.2009	CNG	Transit Bus	2009	248	7.2654	1.4382
3.42.2010	CNG	Transit Bus	2010	284	7.2574	1.4382
3.42.2011	CNG	Transit Bus	2011	313	7.2493	1.4382
3.42.2012	CNG	Transit Bus	2012	343	7.2417	1.4382
3.42.2013	CNG	Transit Bus	2013	376	7.2342	1.4382
3.42.2014	CNG	Transit Bus	2014	410	7.2116	1.4349
3.42.2015	CNG	Transit Bus	2015	448	7.2046	1.4349
3.42.2016	CNG	Transit Bus	2016	489	7.1976	1.4349
3.42.2017	CNG	Transit Bus	2017	522	7.1914	1.4349
3.42.2018	CNG	Transit Bus	2018	560	7.1849	1.4349
3.42.2019	CNG	Transit Bus	2019	599	7.1788	1.4349
3.42.2020	CNG	Transit Bus	2020	638	7.1728	1.4349
3.42.2021	CNG	Transit Bus	2021	685	3.3087	1.2062
3.42.2022	CNG	Transit Bus	2022	724	3.3032	1.2062
3.42.2023	CNG	Transit Bus	2023	760	3.2978	1.2062
3.42.2024	CNG	Transit Bus	2024	797	3.2924	1.2062
3.42.2025	CNG	Transit Bus	2025	853	3.2875	1.2062
3.42.2026	CNG	Transit Bus	2026	915	3.2826	1.2062
5.42.5	E-85	Transit Bus	42.5	877,709	3.2331	0.1367
5.21.21	E-85	Pass Car	1.21	208,573	3.4960	0.1305
5.21.1998	E-85	Pass Car	1998	25	24.5329	2.0986
5.21.1999	E-85	Pass Car	1999	73	24.2348	2.0829
5.21.2000	E-85	Pass Car	2000	123	23.8374	2.0621
5.21.2001	E-85	Pass Car	2001	172	12.4395	0.9270
5.21.2002	E-85	Pass Car	2002	336	11.9449	0.8777
5.21.2003	E-85	Pass Car	2003	449	11.6549	0.8051
5.21.2004	E-85	Pass Car	2004	485	10.9695	0.5169
5.21.2005	E-85	Pass Car	2005	641	10.3939	0.4203
5.21.2006	E-85	Pass Car	2006	931	9.9622	0.3737
5.21.2007	E-85	Pass Car	2007	1,414	9.4142	0.3155
5.21.2008	E-85	Pass Car	2008	2,564	9.0996	0.2905
5.21.2009	E-85	Pass Car	2009	3,070	8.7949	0.2659
5.21.2010	E-85	Pass Car	2010	4,294	7.9964	0.2433
5.21.2011	E-85	Pass Car	2011	5,382	7.2920	0.2362
5.21.2012	E-85	Pass Car	2012	9,317	6.1783	0.2096
5.21.2013	E-85	Pass Car	2013	5,944	5.5791	0.2038
5.21.2014	E-85	Pass Car	2014	8,624	5.4584	0.1984
5.21.2015	E-85	Pass Car	2015	10,783	5.3462	0.1933
5.21.2016	E-85	Pass Car	2016	8,070	5.2421	0.1886

3.1259	0.2857	0.0206	0.0030	0.3229	0.1645	0.0201	1,160.1936
1.0399	0.0142	0.0206	0.0030	0.0160	0.1645	0.0201	198.5333
1.0397	0.0141	0.0206	0.0030	0.0160	0.1645	0.0201	250.0496
0.5858	0.0141	0.0206	0.0030	0.0159	0.1645	0.0201	311.6846
0.5857	0.0141	0.0206	0.0030	0.0159	0.1645	0.0201	378.1511
0.5856	0.0140	0.0206	0.0030	0.0159	0.1645	0.0201	446.3900
0.2211	0.0042	0.0206	0.0030	0.0048	0.1645	0.0201	1,348.3896
0.2211	0.0042	0.0206	0.0030	0.0048	0.1645	0.0201	1,599.2874
0.2210	0.0042	0.0206	0.0030	0.0048	0.1645	0.0201	1,801.2354
0.2209	0.0042	0.0206	0.0030	0.0048	0.1645	0.0201	2,063.5304
0.2208	0.0042	0.0206	0.0030	0.0048	0.1645	0.0201	2,270.8527
0.2208	0.0032	0.0206	0.0030	0.0036	0.1645	0.0201	2,480.7372
0.2207	0.0032	0.0206	0.0030	0.0036	0.1645	0.0201	2,718.8834
0.2204	0.0032	0.0206	0.0030	0.0036	0.1645	0.0201	2,954.5262
0.2203	0.0032	0.0206	0.0030	0.0036	0.1645	0.0201	3,226.6182
0.2203	0.0032	0.0206	0.0030	0.0036	0.1645	0.0201	3,518.6972
0.2202	0.0026	0.0206	0.0030	0.0030	0.1645	0.0201	3,756.2262
0.2202	0.0026	0.0206	0.0030	0.0030	0.1645	0.0201	4,021.1019
0.2201	0.0024	0.0206	0.0030	0.0027	0.1645	0.0201	4,302.8253
0.2200	0.0024	0.0206	0.0030	0.0027	0.1645	0.0201	4,576.3905
0.0766	0.0021	0.0206	0.0030	0.0024	0.1645	0.0201	2,266.9611
0.0766	0.0021	0.0206	0.0030	0.0024	0.1645	0.0201	2,390.1285
0.0765	0.0014	0.0206	0.0030	0.0016	0.1645	0.0201	2,505.5948
0.0765	0.0014	0.0206	0.0030	0.0015	0.1645	0.0201	2,622.9520
0.0764	0.0014	0.0206	0.0030	0.0015	0.1645	0.0201	2,802.7943
0.0764	0.0014	0.0206	0.0030	0.0015	0.1645	0.0201	3,002.3437
0.3036	0.0101	0.0047	0.0015	0.0114	0.0375	0.0101	2,837,717.5880
0.3589	0.0093	0.0043	0.0015	0.0105	0.0346	0.0101	729,166.0029
4.7428	0.2092	0.0043	0.0015	0.2365	0.0346	0.0101	606.5526
4.6621	0.1859	0.0043	0.0015	0.2101	0.0346	0.0101	1,774.1154
4.5723	0.1862	0.0043	0.0015	0.2105	0.0346	0.0101	2,934.3878
2.5631	0.1252	0.0043	0.0015	0.1415	0.0346	0.0101	2,143.3024
2.4747	0.1148	0.0043	0.0015	0.1297	0.0346	0.0101	4,014.7297
2.3778	0.1055	0.0043	0.0015	0.1193	0.0346	0.0101	5,237.3885
2.1938	0.0541	0.0043	0.0015	0.0611	0.0346	0.0101	5,315.1346
2.1071	0.0524	0.0043	0.0015	0.0592	0.0346	0.0101	6,658.1274
1.5860	0.0507	0.0043	0.0015	0.0573	0.0346	0.0101	9,274.1877
1.0430	0.0330	0.0043	0.0015	0.0373	0.0346	0.0101	13,310.4971
0.9983	0.0319	0.0043	0.0015	0.0361	0.0346	0.0101	23,330.8457
0.9550	0.0309	0.0043	0.0015	0.0349	0.0346	0.0101	26,998.1197
0.8421	0.0281	0.0043	0.0015	0.0318	0.0346	0.0101	34,336.6227
0.7530	0.0255	0.0043	0.0015	0.0289	0.0346	0.0101	39,243.2979
0.5264	0.0156	0.0043	0.0015	0.0176	0.0346	0.0101	57,561.7376
0.4646	0.0141	0.0043	0.0015	0.0160	0.0346	0.0101	33,163.0238
0.4483	0.0138	0.0043	0.0015	0.0156	0.0346	0.0101	47,072.3429
0.4331	0.0134	0.0043	0.0015	0.0152	0.0346	0.0101	57,650.2456
0.4084	0.0131	0.0043	0.0015	0.0148	0.0346	0.0101	42,302.6100

672.5860	161.9482	14.7993	1.0652	0.1565	16.7296
412.7446	71.6505	0.9768	1.4167	0.2081	1.1042
521.6423	90.5403	1.2316	1.7904	0.2630	1.3923
652.5320	63.8091	1.5370	2.2397	0.3290	1.7374
794.3241	77.6626	1.8667	2.7264	0.4005	2.1102
940.8481	91.9744	2.2059	3.2293	0.4744	2.4936
266.2974	40.9452	0.7834	3.8069	0.5593	0.8856
316.2158	48.6037	0.9296	4.5205	0.6641	1.0509
356.5660	54.7864	1.0475	5.0973	0.7489	1.1841
408.9398	62.8131	1.2006	5.8461	0.8589	1.3572
450.5275	69.1783	1.3219	6.4406	0.9462	1.4943
492.6817	75.6275	1.1006	7.0432	1.0348	1.2442
540.5423	82.9485	1.2066	7.7274	1.1353	1.3639
587.8772	90.2934	1.3130	8.4234	1.2375	1.4842
642.6447	98.6767	1.4342	9.2082	1.3528	1.6213
701.4979	107.6825	1.5644	10.0514	1.4767	1.7684
749.4974	115.0213	1.3812	10.7392	1.5778	1.5613
803.0747	123.2107	1.4787	11.5069	1.6906	1.6716
860.0644	131.9214	1.4198	12.3235	1.8105	1.6050
915.5109	140.3917	1.5101	13.1180	1.9272	1.7070
826.3946	52.4891	1.4541	14.0869	2.0696	1.6437
872.7532	55.3975	1.5343	14.8771	2.1857	1.7344
916.4253	58.1322	1.0424	15.6216	2.2951	1.1784
960.8983	60.9150	1.0916	16.3797	2.4064	1.2339
1,028.3365	65.1517	1.1667	17.5293	2.5753	1.3189
1,103.1889	69.8539	1.2502	18.8052	2.7628	1.4132
119,960.3510	266,457.2156	8,848.7206	4,111.2483	1,331.9471	10,002.8586
27,224.7801	74,863.6860	1,936.4642	900.8127	316.5144	2,189.0374
51.8852	117.2608	5.1730	0.1068	0.0375	5.8477
152.4808	341.2923	13.6076	0.3162	0.1111	15.3825
253.8411	562.8523	22.9249	0.5317	0.1868	25.9151
159.7184	441.6176	21.5648	0.7441	0.2615	24.3775
294.9970	831.7692	38.5771	1.4516	0.5100	43.6088
361.7811	1,068.5347	47.4143	1.9408	0.6819	53.5986
250.4797	1,063.0022	26.2058	2.0927	0.7353	29.6238
269.2661	1,349.7763	33.5559	2.7666	0.9721	37.9326
347.8665	1,476.5122	47.1930	4.0207	1.4127	53.3483
446.1007	1,474.6601	46.6653	6.1064	2.1456	52.7519
744.8300	2,559.4815	81.8349	11.0736	3.8909	92.5086
816.2567	2,931.6353	94.7766	13.2581	4.6584	107.1383
1,044.6114	3,616.0623	120.6720	18.5456	6.5163	136.4117
1,270.9724	4,052.2211	137.4456	23.2430	8.1668	155.3726
1,953.1201	4,904.4477	145.3449	40.2383	14.1384	164.3018
1,211.5038	2,761.5806	84.0088	25.6725	9.0204	94.9660
1,710.7143	3,865.7133	118.7932	37.2458	13.0869	134.2874
2,084.5318	4,670.0678	144.9523	46.5730	16.3642	163.8586
1,522.0782	3,295.4987	105.9836	34.8531	12.2461	119.8070

8.5216	1.0433
11.3333	1.3875
14.3234	1.7536
17.9175	2.1937
21.8109	2.6703
25.8342	3.1629
30.4552	3.7287
36.1642	4.4276
40.7788	4.9926
46.7686	5.7259
51.5248	6.3082
56.3458	6.8985
61.8194	7.5686
67.3874	8.2503
73.6654	9.0189
80.4116	9.8449
85.9138	10.5185
92.0552	11.2704
98.5878	12.0702
104.9437	12.8484
112.6953	13.7974
119.0173	14.5714
124.9727	15.3005
131.0376	16.0431
140.2340	17.1690
150.4416	18.4187
32,889.9868	8,879.6927
7,206.4999	2,110.1066
0.8543	0.2501
2.5293	0.7406
4.2533	1.2454
5.9532	1.7431
11.6129	3.4003
15.5265	4.5462
16.7416	4.9020
22.1332	6.4807
32.1655	9.4182
48.8513	14.3040
88.5887	25.9392
106.0647	31.0564
148.3647	43.4421
185.9439	54.4456
321.9068	94.2561
205.3801	60.1366
297.9658	87.2464
372.5853	109.0951
278.8235	81.6414

5.21.2017	E-85	Pass Car	2017	8,158	3.0900	0.1355
5.21.2018	E-85	Pass Car	2018	7,809	2.9415	0.1275
5.21.2019	E-85	Pass Car	2019	10,705	2.7510	0.1077
5.21.2020	E-85	Pass Car	2020	15,323	2.6197	0.1014
5.21.2021	E-85	Pass Car	2021	16,114	2.4152	0.0901
5.21.2022	E-85	Pass Car	2022	17,096	2.3017	0.0848
5.21.2023	E-85	Pass Car	2023	17,146	1.7867	0.0692
5.21.2024	E-85	Pass Car	2024	17,361	1.7205	0.0658
5.21.2025	E-85	Pass Car	2025	17,728	1.6634	0.0624
5.21.2026	E-85	Pass Car	2026	18,435	1.6385	0.0614
5.31.31	E-85	Pass Truck	1.31	542,899	3.1389	0.1380
5.31.1998	E-85	Pass Truck	1998	72	30.4212	3.0247
5.31.1999	E-85	Pass Truck	1999	185	30.4213	3.0247
5.31.2000	E-85	Pass Truck	2000	233	30.4213	3.0247
5.31.2001	E-85	Pass Truck	2001	449	17.1439	1.5041
5.31.2002	E-85	Pass Truck	2002	742	16.8123	1.4759
5.31.2003	E-85	Pass Truck	2003	645	17.0878	1.5287
5.31.2004	E-85	Pass Truck	2004	504	12.9712	0.8224
5.31.2005	E-85	Pass Truck	2005	726	11.7087	0.6311
5.31.2006	E-85	Pass Truck	2006	809	10.9464	0.4533
5.31.2007	E-85	Pass Truck	2007	2,717	10.4089	0.3922
5.31.2008	E-85	Pass Truck	2008	3,491	9.9954	0.3583
5.31.2009	E-85	Pass Truck	2009	7,796	9.6251	0.3295
5.31.2010	E-85	Pass Truck	2010	5,559	8.7906	0.3034
5.31.2011	E-85	Pass Truck	2011	7,053	8.1031	0.2953
5.31.2012	E-85	Pass Truck	2012	5,446	6.6046	0.2600
5.31.2013	E-85	Pass Truck	2013	8,172	6.0291	0.2533
5.31.2014	E-85	Pass Truck	2014	13,280	5.9004	0.2470
5.31.2015	E-85	Pass Truck	2015	14,401	5.7808	0.2411
5.31.2016	E-85	Pass Truck	2016	19,184	5.6704	0.2357
5.31.2017	E-85	Pass Truck	2017	30,363	3.7180	0.2128
5.31.2018	E-85	Pass Truck	2018	41,006	3.0609	0.1563
5.31.2019	E-85	Pass Truck	2019	71,552	2.8292	0.1267
5.31.2020	E-85	Pass Truck	2020	37,072	2.6631	0.1165
5.31.2021	E-85	Pass Truck	2021	39,784	2.4190	0.0999
5.31.2022	E-85	Pass Truck	2022	43,514	2.2746	0.0913
5.31.2023	E-85	Pass Truck	2023	44,436	1.6955	0.0700
5.31.2024	E-85	Pass Truck	2024	45,707	1.6078	0.0642
5.31.2025	E-85	Pass Truck	2025	47,722	1.5478	0.0596
5.31.2026	E-85	Pass Truck	2026	50,278	1.5260	0.0587
5.32.32	E-85	Light Truck	2.32	126,238	3.2040	0.1410
5.32.1998	E-85	Light Truck	1998	17	32.1429	3.1469
5.32.1999	E-85	Light Truck	1999	43	32.1430	3.1469
5.32.2000	E-85	Light Truck	2000	53	32.1430	3.1469
5.32.2001	E-85	Light Truck	2001	94	18.0297	1.5703
5.32.2002	E-85	Light Truck	2002	172	17.6790	1.5412
5.32.2003	E-85	Light Truck	2003	149	17.9529	1.5945

0.3041	0.0084	0.0043	0.0015	0.0095	0.0346	0.0101	25,209.2900
0.2885	0.0079	0.0043	0.0015	0.0089	0.0346	0.0101	22,971.1037
0.2668	0.0062	0.0043	0.0015	0.0070	0.0346	0.0101	29,449.0065
0.2543	0.0051	0.0043	0.0015	0.0058	0.0346	0.0101	40,142.3792
0.2399	0.0037	0.0043	0.0015	0.0041	0.0346	0.0101	38,919.4346
0.2296	0.0036	0.0043	0.0015	0.0041	0.0346	0.0101	39,350.8579
0.2089	0.0029	0.0043	0.0015	0.0033	0.0346	0.0101	30,634.9148
0.2030	0.0029	0.0043	0.0015	0.0033	0.0346	0.0101	29,870.0103
0.1980	0.0029	0.0043	0.0015	0.0032	0.0346	0.0101	29,487.4265
0.1944	0.0028	0.0043	0.0015	0.0032	0.0346	0.0101	30,204.3101
0.2829	0.0103	0.0048	0.0015	0.0116	0.0383	0.0101	1,704,084.3249
5.5646	0.2025	0.0048	0.0015	0.2289	0.0383	0.0101	2,200.0548
5.5539	0.2047	0.0048	0.0015	0.2315	0.0383	0.0101	5,633.3768
5.5539	0.1859	0.0048	0.0015	0.2102	0.0383	0.0101	7,102.0371
2.4483	0.1457	0.0048	0.0015	0.1648	0.0383	0.0101	7,690.9312
2.4131	0.1171	0.0048	0.0015	0.1323	0.0383	0.0101	12,481.7401
2.3995	0.1251	0.0048	0.0015	0.1415	0.0383	0.0101	11,017.5201
2.0918	0.0590	0.0048	0.0015	0.0668	0.0383	0.0101	6,541.8033
1.9949	0.0575	0.0048	0.0015	0.0650	0.0383	0.0101	8,503.0181
1.4966	0.0558	0.0048	0.0015	0.0631	0.0383	0.0101	8,854.6511
0.9826	0.0409	0.0048	0.0015	0.0463	0.0383	0.0101	28,279.2275
0.9418	0.0396	0.0048	0.0015	0.0447	0.0383	0.0101	34,895.6953
0.9022	0.0382	0.0048	0.0015	0.0432	0.0383	0.0101	75,033.7222
0.7953	0.0346	0.0048	0.0015	0.0391	0.0383	0.0101	48,870.1093
0.7088	0.0313	0.0048	0.0015	0.0354	0.0383	0.0101	57,152.6970
0.4884	0.0214	0.0048	0.0015	0.0242	0.0383	0.0101	35,969.7145
0.4290	0.0193	0.0048	0.0015	0.0218	0.0383	0.0101	49,267.8570
0.4122	0.0188	0.0048	0.0015	0.0212	0.0383	0.0101	78,356.2951
0.3966	0.0182	0.0048	0.0015	0.0206	0.0383	0.0101	83,248.5067
0.3735	0.0178	0.0048	0.0015	0.0201	0.0383	0.0101	108,780.2964
0.2945	0.0142	0.0048	0.0015	0.0161	0.0383	0.0101	112,887.6911
0.2639	0.0115	0.0048	0.0015	0.0130	0.0383	0.0101	125,516.0944
0.2416	0.0094	0.0048	0.0015	0.0106	0.0383	0.0101	202,438.6933
0.2290	0.0078	0.0048	0.0015	0.0089	0.0383	0.0101	98,726.8513
0.2141	0.0058	0.0048	0.0015	0.0066	0.0383	0.0101	96,238.8832
0.2041	0.0057	0.0048	0.0015	0.0065	0.0383	0.0101	98,979.7197
0.1821	0.0038	0.0048	0.0015	0.0043	0.0383	0.0101	75,339.2661
0.1764	0.0037	0.0048	0.0015	0.0042	0.0383	0.0101	73,486.5452
0.1718	0.0037	0.0048	0.0015	0.0042	0.0383	0.0101	73,865.3821
0.1688	0.0036	0.0048	0.0015	0.0041	0.0383	0.0101	76,725.9448
0.3011	0.0106	0.0048	0.0015	0.0119	0.0386	0.0101	404,467.2601
5.9807	0.2035	0.0048	0.0015	0.2300	0.0386	0.0101	555.1728
5.9701	0.1972	0.0048	0.0015	0.2230	0.0386	0.0101	1,380.4270
5.9701	0.1825	0.0048	0.0015	0.2063	0.0386	0.0101	1,690.0912
2.5874	0.1399	0.0048	0.0015	0.1581	0.0386	0.0101	1,686.6054
2.5498	0.1161	0.0048	0.0015	0.1312	0.0386	0.0101	3,046.9309
2.5355	0.1221	0.0048	0.0015	0.1380	0.0386	0.0101	2,666.6882

1,105.2901	2,481.2687	68.5060	35.2359	12.3807	77.4412
995.5924	2,252.8527	61.4790	33.7283	11.8509	69.4978
1,152.7731	2,856.5956	66.0174	46.2341	16.2451	74.6279
1,553.4345	3,896.3625	78.8872	66.1807	23.2536	89.1764
1,452.6645	3,866.2015	59.1457	69.5969	24.4539	66.8602
1,450.3790	3,925.9826	61.7725	73.8373	25.9439	69.8295
1,185.7922	3,581.3271	50.4290	74.0539	26.0200	57.0064
1,142.8089	3,525.1988	50.3906	74.9822	26.3462	56.9630
1,106.6806	3,510.1371	50.8409	76.5647	26.9022	57.4721
1,132.3295	3,583.7733	52.3023	79.6182	27.9750	59.1241
74,935.8826	153,584.6109	5,579.4752	2,601.5919	823.8636	6,307.2057
218.7426	402.4273	14.6413	0.3466	0.1097	16.5510
560.1034	1,028.4711	37.9147	0.8874	0.2810	42.8598
706.1270	1,296.6028	43.4084	1.1187	0.3543	49.0702
674.7398	1,098.3395	65.3817	2.1498	0.6808	73.9095
1,095.7140	1,791.5335	86.9144	3.5577	1.1266	98.2507
985.6276	1,547.1217	80.6900	3.0897	0.9784	91.2144
414.7822	1,054.9572	29.7803	2.4168	0.7653	33.6645
458.3259	1,448.7210	41.7791	3.4801	1.1021	47.2282
366.6893	1,210.5971	45.1773	3.8763	1.2275	51.0697
1,065.5549	2,669.4327	111.2503	13.0192	4.1229	125.7605
1,250.7159	3,288.0496	138.1532	16.7299	5.2980	156.1725
2,568.2954	7,033.2932	297.7767	37.3567	11.8300	336.6158
1,686.7342	4,421.1833	192.5175	26.6407	8.4365	217.6269
2,082.6757	4,999.0326	220.9765	33.7991	10.7034	249.7992
1,416.0572	2,660.1727	116.6873	26.0983	8.2647	131.9069
2,069.5497	3,505.7425	157.8537	39.1589	12.4007	178.4426
3,279.4944	5,474.2107	249.0621	63.6369	20.1523	281.5472
3,471.9415	5,711.5630	262.5619	69.0092	21.8536	296.8079
4,521.3201	7,164.5267	340.5148	91.9298	29.1120	384.9277
6,461.8695	8,941.6555	432.5534	145.4986	46.0759	488.9718
6,407.9463	10,822.2953	470.8529	196.5015	62.2274	532.2666
9,064.4506	17,283.5758	672.9039	342.8800	108.5820	760.6705
4,320.5833	8,490.7405	290.3913	177.6516	56.2581	328.2669
3,973.7746	8,519.4377	232.4717	190.6477	60.3737	262.7929
3,972.1315	8,881.1560	249.9503	208.5229	66.0344	282.5514
3,111.4371	8,092.2070	167.9580	212.9371	67.4322	189.8644
2,935.8671	8,061.6336	170.3913	219.0295	69.3615	192.6153
2,843.9270	8,200.5583	175.7438	228.6874	72.4202	198.6664
2,950.7047	8,485.3732	183.2172	240.9339	76.2982	207.1142
17,799.6884	38,008.9186	1,332.7812	608.8438	191.5690	1,506.6154
54.3534	103.2986	3.5140	0.0833	0.0262	3.9723
135.1486	256.3938	8.4710	0.2071	0.0652	9.5759
165.4658	313.9083	9.5950	0.2536	0.0798	10.8464
146.8988	242.0410	13.0837	0.4512	0.1420	14.7903
265.6188	439.4574	20.0103	0.8312	0.2615	22.6203
236.8436	376.6146	18.1344	0.7164	0.2254	20.4997

281.8865	82.5382
269.8266	79.0067
369.8719	108.3010
529.4449	155.0247
556.7752	163.0269
590.6987	172.9602
592.4311	173.4675
599.8576	175.6421
612.5179	179.3488
636.9450	186.5011
20,812.7389	5,492.4529
2.7725	0.7317
7.0991	1.8734
8.9499	2.3619
17.1981	4.5386
28.4616	7.5110
24.7175	6.5229
19.3344	5.1023
27.8405	7.3471
31.0108	8.1837
104.1536	27.4859
133.8390	35.3200
298.8544	78.8671
213.1241	56.2434
270.3927	71.3563
208.7869	55.0986
313.2709	82.6720
509.0954	134.3496
552.0735	145.6915
735.4384	194.0811
1,163.9879	307.1755
1,572.0115	414.8520
2,743.0400	723.8835
1,421.2125	375.0559
1,525.1822	402.4926
1,668.1845	440.2321
1,703.4980	449.5500
1,752.2348	462.4119
1,829.5029	482.8038
1,927.4716	508.6575
4,870.7480	1,277.1333
0.6664	0.1747
1.6570	0.4345
2.0288	0.5320
3.6094	0.9464
6.6498	1.7436
5.7312	1.5027

5.32.2004	E-85	Light Truck	2004	116	13.5991	0.8619
5.32.2005	E-85	Light Truck	2005	167	12.2667	0.6619
5.32.2006	E-85	Light Truck	2006	183	11.4383	0.4739
5.32.2007	E-85	Light Truck	2007	632	10.7677	0.4062
5.32.2008	E-85	Light Truck	2008	802	10.2453	0.3672
5.32.2009	E-85	Light Truck	2009	1,837	9.8514	0.3370
5.32.2010	E-85	Light Truck	2010	1,326	8.9562	0.3098
5.32.2011	E-85	Light Truck	2011	1,641	8.2146	0.3010
5.32.2012	E-85	Light Truck	2012	1,267	6.6937	0.2651
5.32.2013	E-85	Light Truck	2013	1,901	6.0729	0.2579
5.32.2014	E-85	Light Truck	2014	3,089	5.9341	0.2511
5.32.2015	E-85	Light Truck	2015	3,350	5.8051	0.2447
5.32.2016	E-85	Light Truck	2016	4,462	5.6860	0.2389
5.32.2017	E-85	Light Truck	2017	7,063	3.7625	0.2134
5.32.2018	E-85	Light Truck	2018	9,538	3.1129	0.1577
5.32.2019	E-85	Light Truck	2019	16,643	2.8789	0.1286
5.32.2020	E-85	Light Truck	2020	8,608	2.7114	0.1185
5.32.2021	E-85	Light Truck	2021	9,241	2.4669	0.1021
5.32.2022	E-85	Light Truck	2022	10,112	2.3223	0.0936
5.32.2023	E-85	Light Truck	2023	10,327	1.7584	0.0727
5.32.2024	E-85	Light Truck	2024	10,623	1.6702	0.0670
5.32.2025	E-85	Light Truck	2025	11,096	1.6086	0.0624
5.32.2026	E-85	Light Truck	2026	11,686	1.5851	0.0614
5.32.Grand Total	E-85	Light Truck	otal	34,234,008	3.6734	0.3499

2.2039	0.0622	0.0048	0.0015	0.0703	0.0386	0.0101	1,573.8799
2.1004	0.0605	0.0048	0.0015	0.0684	0.0386	0.0101	2,048.9608
1.5630	0.0587	0.0048	0.0015	0.0664	0.0386	0.0101	2,095.8604
1.0419	0.0430	0.0048	0.0015	0.0486	0.0386	0.0101	6,805.8208
0.9950	0.0415	0.0048	0.0015	0.0470	0.0386	0.0101	8,219.2437
0.9528	0.0401	0.0048	0.0015	0.0453	0.0386	0.0101	18,101.6810
0.8379	0.0362	0.0048	0.0015	0.0409	0.0386	0.0101	11,874.3595
0.7451	0.0326	0.0048	0.0015	0.0369	0.0386	0.0101	13,476.9404
0.5184	0.0222	0.0048	0.0015	0.0251	0.0386	0.0101	8,479.6573
0.4544	0.0200	0.0048	0.0015	0.0226	0.0386	0.0101	11,543.3064
0.4364	0.0194	0.0048	0.0015	0.0219	0.0386	0.0101	18,330.2268
0.4197	0.0188	0.0048	0.0015	0.0212	0.0386	0.0101	19,445.4424
0.3956	0.0183	0.0048	0.0015	0.0207	0.0386	0.0101	25,372.5909
0.3137	0.0146	0.0048	0.0015	0.0166	0.0386	0.0101	26,572.9668
0.2816	0.0118	0.0048	0.0015	0.0133	0.0386	0.0101	29,691.5546
0.2580	0.0096	0.0048	0.0015	0.0109	0.0386	0.0101	47,914.6256
0.2448	0.0080	0.0048	0.0015	0.0091	0.0386	0.0101	23,339.6813
0.2290	0.0060	0.0048	0.0015	0.0068	0.0386	0.0101	22,797.6246
0.2184	0.0059	0.0048	0.0015	0.0066	0.0386	0.0101	23,482.5926
0.1951	0.0039	0.0048	0.0015	0.0044	0.0386	0.0101	18,158.7216
0.1889	0.0038	0.0048	0.0015	0.0043	0.0386	0.0101	17,743.6181
0.1841	0.0038	0.0048	0.0015	0.0042	0.0386	0.0101	17,849.1955
0.1808	0.0037	0.0048	0.0015	0.0042	0.0386	0.0101	18,522.7939
0.3282	0.0171	0.0062	0.0017	0.0191	0.0494	0.0115	125,754,889.2384

99.7554	255.0691	7.1958	0.5582	0.1756	8.1344
110.5584	350.8321	10.1118	0.8056	0.2535	11.4306
86.8253	286.3861	10.7602	0.8837	0.2781	12.1636
256.7155	658.5437	27.1910	3.0484	0.9592	30.7375
294.5543	798.2469	33.3211	3.8692	1.2174	37.6672
619.2833	1,750.7332	73.5959	8.8621	2.7884	83.1951
410.7065	1,110.9498	47.9996	6.3945	2.0120	54.2602
493.8399	1,222.3645	53.5568	7.9127	2.4897	60.5422
335.8906	656.6818	28.1736	6.1099	1.9224	31.8483
490.1426	863.7362	37.9499	9.1675	2.8845	42.8998
775.5163	1,348.1342	59.7990	14.8980	4.6876	67.5986
819.8049	1,405.9830	62.9588	16.1557	5.0833	71.1706
1,066.0482	1,765.1060	81.5478	21.5217	6.7717	92.1842
1,506.8654	2,215.3032	103.4629	34.0627	10.7176	116.9575
1,504.5464	2,685.9832	112.4917	46.0030	14.4746	127.1639
2,140.9576	4,294.4655	160.5839	80.2715	25.2569	181.5286
1,020.4890	2,107.2080	69.1043	41.5169	13.0630	78.1175
943.6495	2,116.3971	55.2867	44.5707	14.0239	62.4977
946.3871	2,208.4986	59.4118	48.7687	15.3448	67.1608
751.2342	2,014.6394	39.8933	49.8067	15.6714	45.0965
711.8884	2,007.2802	40.4437	51.2364	16.1212	45.7187
692.1725	2,042.3694	41.7019	53.5171	16.8389	47.1411
717.5279	2,112.2935	43.4311	56.3600	17.7333	49.0959
11,979,192.3546	11,234,140.5342	586,092.9635	211,478.8099	59,302.9174	654,664.3130

4.4655	1.1709
6.4448	1.6899
7.0698	1.8537
24.3874	6.3945
30.9537	8.1162
70.8968	18.5895
51.1559	13.4133
63.3015	16.5980
48.8790	12.8163
73.3399	19.2301
119.1842	31.2507
129.2457	33.8889
172.1731	45.1446
272.5006	71.4511
368.0238	96.4977
642.1718	168.3807
332.1343	87.0873
356.5650	93.4929
390.1493	102.2992
398.4544	104.4764
409.8914	107.4752
428.1379	112.2596
450.8795	118.2227

1,691,830.0667	395,354.7598
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State of Utah**DEPARTMENT OF TRANSPORTATION**

Division of Traffic & Safety
4801 South 2700 West
Box 143200
Salt Lake City, Utah 84116-3200
Phone: (801) 965-4193, Fax: (801) 965-4736

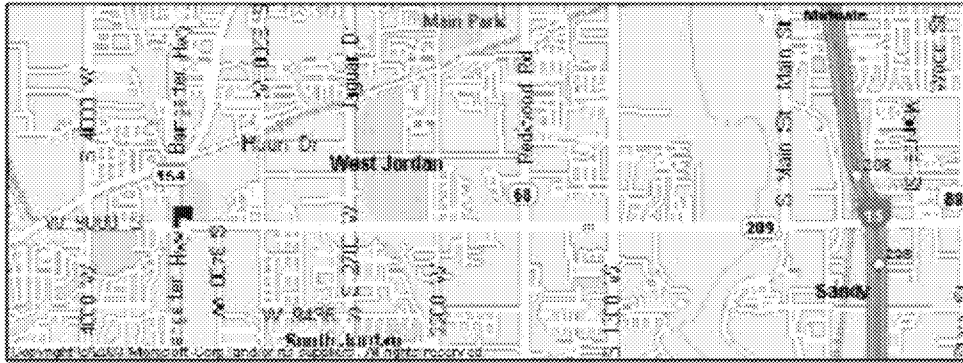
MEMORANDUM

September 4, 2007

TO: Kris Peterson, P.E.
Region Two Traffic Operations Engineer

FROM: Larry Montoya, P.E.
Traffic and Safety Design Engineer

SUBJECT: Left-Turn Study for SR-154 & 9000 South in West Jordan
Study # 2-213-07



We have studied the subject intersection as requested. This intersection is within the range of UDOT criteria to warrant dual left-turn lanes in the east and westbound direction. The three-year left-turn accident rate is 0.23. Attached are the study results for your use.

A warranting field review will be scheduled in the near future, where we will consider other applicable safety and traffic management issues and determine the best course of action for this location. If you have any questions regarding this location or do not concur with our recommendations please contact the Traffic Studies office at (801) 965-4264.

LJM/rwl

cc: Robert Hull Troy Peterson

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HCM Summary Results

2-213-07 SR-154 & 9000 S
Weston Lamplugh
PM Peak Hr (Existing)

9000 South/SR-154
08/29/2007
Case: 2-213-07 SR-154 & 9000 S Existing

App	Lane Grp	v/s	Lane Group		Approach		
			X v/c	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
EB	L	0.22	2.25	634.1	F	348.7	F
	T	0.18	0.73	45.5	D		
	R	0.06	0.27	37.3	D		
WB	L	0.32	3.21	1065.1	F	443.8	F
	T	0.31	1.26	175.0	F		
	R	0.11	0.47	39.9	D		
NB	L	0.15	1.21	169.8	F	71.0	E
	T	0.30	0.86	41.2	D		
	R	0.06	0.16	27.0	C		
SB	L	0.14	1.09	124.0	F	93.9	F
	T	0.38	1.09	91.2	F		
	R	0.08	0.24	27.9	C		
	Int.	1.16	1.42	193.2	F		

* Critical Lane Group

SIGCinema v2.11

Page 1

NETSIM Summary Results

2-213-07 SR-154 & 9000 S
Weston Lamplugh
PM Peak Hr (Existing)

9000 South/SR-154
08/29/2007
Case: 2-213-07 SR-154 & 9000 S Existing

App	Lane Group	Queues Per Lane Avg/Max (veh)	Average Speed (mph)	Spillback in Worst Lane (% of Peak Period)
EB	L	29 / 29	0.8	84.1
	T	7 / 19	2.6	69.8

	R	5 / 8	4.3	0.0
	All		2.2	84.1
WB	L	28 / 30	0.8	81.2
	T	16 / 28	2.5	64.0
	R	3 / 5	15.7	0.0
	All		2.3	81.2
NB	L	9 / 11	3.6	0.0
	T	11 / 14	9.3	0.0
	R	2 / 5	14.5	0.0
	All		7.7	0.0
SB	L	7 / 9	4.1	0.0
	T	16 / 19	7.6	0.0
	R	1 / 2	22.6	0.0
	All		7.2	0.0
Intersect.			4.6	

SRG/Cinema v2.11

Page 2

NETSIM Environmental Statistics

2-213-07 SR-154 & 9000 S
 Weston Lamplugh
 PM Peak Hr (Existing)

9000 South/SR-154
 08/29/2007
 Case: 2-213-07 SR-154 & 9000 S Existing

Fuel Consumption

Approach	Gallons			Miles Per Gallon		
	Autos	Trucks	Buses	Autos	Trucks	Buses
EB	5.7	0.4	0.0	3.6	1.9	0.0
WB	8.8	0.2	0.0	3.3	2.1	0.0
NB	6.7	0.1	0.0	9.1	6.9	0.0
SB	8.7	0.3	0.0	8.4	4.7	0.0
All	29.9	1.0	0.0	6.1	3.4	0.0

Auto Pollutant Emissions (Grams/Mile-Hour)

Approach				Average Speed (mph)	RTOR Maneuvers Completed	
	HC	CO	NOX			
EB	479.1	8254.4	3039.3	2.2	37	
WB	736.7	13632.5	1856.8	2.3	44	

NB	611.9	15177.1	1701.4	7.7	32	
SB	792.9	19528.1	2261.2	7.2	38	
All	655.2	14148.0	1714.7	4.6		

NETSIM Queue Statistics

Approach	Lane Group	Queue Lengths		Spillback Measures			Animation Frame Showing Longest Queue
		Average Queue Per Lane Per Cycle (veh)	Maximum Per Lane Queue (veh)	Max Pct of Time that Queue Overflow a Lane	Pct of Cycles with Turn Bay Overflow	Pct of Cycles Where Non-Turner Queue Blocks Turner from Bay	
EB	L	29	29	84.1	100.0	0.0	
	T	7	19	69.8			
	R	5	8	0.0	0.0	12.5	
WB	L	28	30	81.2	100.0	12.5	
	T	16	28	64.0			
	R	3	5	0.0	0.0	62.5	
NB	L	9	11	0.0	0.0	0.0	
	T	11	14	0.0			
	R	2	5	0.0	0.0	0.0	
SB	L	7	9	0.0	0.0	12.5	
	T	16	19	0.0			
	R	1	2	0.0	0.0	12.5	

SIG Cinema v2.11

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HCM Summary Results

2-213-07 SR-154 & 9000 S
 Weston Lamplugh
 PM Peak Hr (E/W Dual LT-lanes)

9000 South/SR-154
 09/04/2007
 Case: 2-213-07 SR-154 & 9000 S with EW Dual LT

App	Lane Grp	v/s	Lane Group		Approach		
			X v/c	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
EB	L	0.10	1.04	113.6	F	67.1	E
	T	0.16	0.67	43.3	D		
	R	0.06	0.26	37.2	D		
WB	L	0.15	1.55	313.4	F	174.6	F
	T	0.28	1.14	122.2	F		
	R	0.11	0.48	39.4	D		
NB	L	0.15	1.21	169.8	F	71.0	E
	T	0.30	0.86	41.2	D		
	R	0.06	0.26	37.2	D		

SB							
L	0.14	1.09	124.0	F	93.9	F	
T	0.38	1.09	91.2	F			
R	0.08	0.24	27.9	C			
Int.	0.96	1.18	102.7	F			

* Critical Lane Group

SIG/Cinema v2.11

Page 1

NETSIM Summary Results

2-213-07 SR-154 & 9000 S
 Weston Lamplugh
 PM Peak Hr (E/W Dual LT-lanes)

9000 South/SR-154
 09/04/2007
 Case: 2-213-07 SR-154 & 9000 S with EW Dual LT

App	Lane Group	Queues Per Lane Avg/Max (veh)	Average Speed (mph)	Spillback in Worst Lane (% of Peak Period)	
EB	L	9 / 11	1.9	0.0	
	T	7 / 9	10.9	0.0	
	R	5 / 8	7.5	0.0	
	All		6.3	0.0	
WB	L	15 / 19	1.2	13.6	
	T	23 / 26	3.2	43.2	
	R	7 / 10	13.9	0.0	
	All		2.9	43.2	
NB	L	8 / 11	4.3	0.0	
	T	11 / 14	9.4	0.0	
	R	3 / 6	16.0	0.0	
	All		8.2	0.0	
SB	L	7 / 9	4.0	0.0	
	T	15 / 19	7.5	0.0	
	R	2 / 4	22.3	0.0	
	All		7.1	0.0	
Intersect			5.5		

NETSIM Environmental Statistics

2-213-07 SR-154 & 9000 S
Weston Lamplugh
PM Peak Hr (E/W Dual LT-lanes)

9000 South/SR-154
09/04/2007
Case: 2-213-07 SR-154 & 9000 S with EW Dual LT

Fuel Consumption

Approach	Gallons			Miles Per Gallon		
	Autos	Trucks	Buses	Autos	Trucks	Buses
EB	4.0	0.2	0.0	8.6	3.8	0.0
WB	11.8	0.3	0.0	3.8	2.3	0.0
NB	6.5	0.2	0.0	9.4	5.9	0.0
SB	9.0	0.3	0.0	8.1	5.0	0.0
All	31.3	0.9	0.0	6.8	4.1	0.0

Auto Pollutant Emissions (Grams/Mile-Hour)

Approach				Average Speed (mph)	RTOR Maneuvers Completed
	HC	CO	NOX		
EB	351.8	7401.7	868.5	6.3	50
WB	1023.3	21939.3	2948.1	2.9	59
NB	596.1	15172.6	1694.4	8.2	32
SB	834.0	21808.8	2430.3	7.1	37
All	701.3	16580.6	1985.3	5.5	

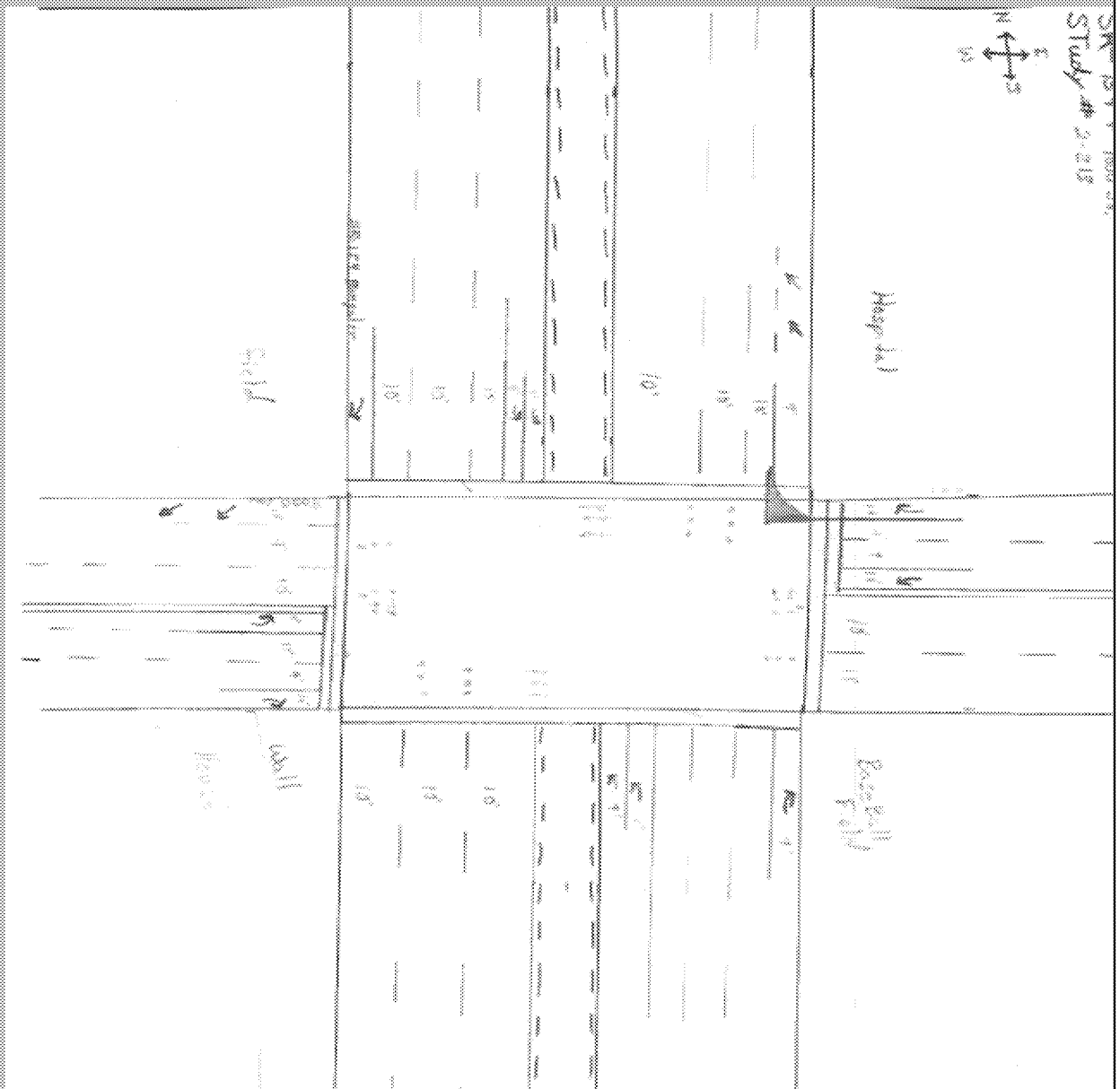
NETSIM Queue Statistics

Approach	Lane Group	Queue Lengths		Spillback Measures			Animation Frame Showing Longest Queue
		Average Queue Per Lane Per Cycle (veh)	Maximum Per Lane Queue (veh)	Max Pct of Time that Queue Overflow a Lane	Pct of Cycles with Turn Bay Overflow	Pct of Cycles Where Non- Turner Queue Blocks Turner from Bay	
EB	L	9	11	0.0	0.0	0.0	
	T	7	9	0.0			
	R	5	8	0.0	0.0	0.0	
WB	L	15	19	13.6	25.0	75.0	
	T	23	36	43.2			
	R	7	10	0.0	0.0	87.5	

ITEM	AC	V	LT	MAX	MIN	W/B
T	11	14	0.0			
R	3	5	0.0	0.0	0.0	
SB	L	7	9	0.0	0.0	12.5
T	15	19	0.0			
R	3	4	0.0	0.0	25.0	

SPRCSchema v2.11

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**DIAMOND TRAFFIC
CHRONOS REPORT TITLE**

 Blaine Major
Utah Department of Transportation

 Page: 1
Date: 08/03/07

Location : Sr-154 & 9000 So.

Notes : left turn study

Study ID : 2-213

Operator : Tw

Weather :

Interval : 15 min

Intervals : 9

S/N : 4335

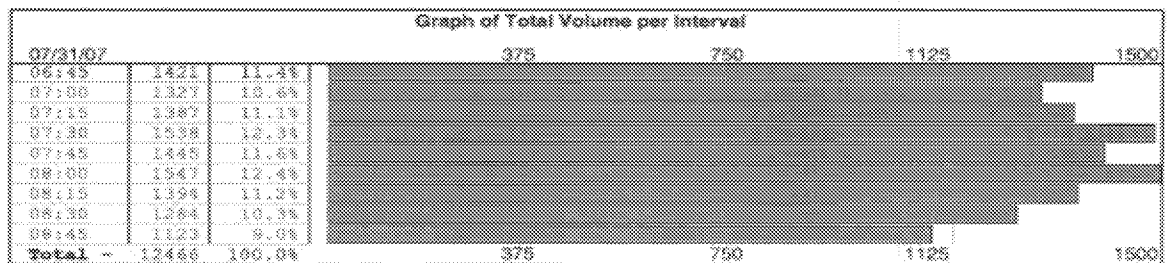
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Starts : 07/31/07 at 06:45

Ends : 07/31/07 at 09:00

 Type : Open Car, Pedestrian
(Study Type 1)

		From North			From South			From East			From West			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
06:45	Car	112	238	30	62	388	38	75	147	88	92	145	78	1421
	Peds			0			0			0			0	0
Hour	Car	112	238	30	62	388	38	75	147	88	92	145	78	1421
	Peds			0			0			0			0	0
	Adj	112	238	30	62	388	38	75	147	88	92	145	78	1421
	%	7.89	16.95	2.11	4.36	21.87	4.59	5.32	10.34	6.05	6.47	10.20	5.48	
07:00	Car	45	279	38	108	355	17	34	115	58	51	174	45	1327
	Peds			0			0			0			0	0
07:15	Car	51	288	34	94	311	38	49	98	65	67	132	37	1387
	Peds			0			0			0			0	0
07:30	Car	143	237	29	98	325	27	35	74	107	77	182	43	1308
	Peds			0			0			0			0	0
07:45	Car	101	205	41	89	302	54	36	101	69	88	150	23	1445
	Peds			0			0			0			0	0
Hour	Car	389	837	180	316	1689	212	185	384	215	234	508	187	3897
	Peds			0			0			0			0	0
	Adj	389	837	180	316	1689	212	185	384	215	234	508	187	3897
	%	5.50	18.43	2.81	5.05	29.65	3.29	2.72	6.74	5.53	5.86	11.02	3.28	
08:00	Car	130	386	52	113	388	90	35	73	85	108	135	55	1567
	Peds			0			0			0			0	0
08:15	Car	55	385	32	75	382	68	38	106	85	58	168	50	1604
	Peds			0			0			0			0	0
08:30	Car	78	321	52	78	372	49	39	87	55	90	154	49	1294
	Peds			0			0			0			0	0
08:45	Car	22	285	25	45	357	31	24	68	43	80	98	44	1123
	Peds			0			0			0			0	0
Hour	Car	250	1695	161	309	1489	227	175	346	268	210	504	209	3548
	Peds			0			0			0			0	0
	Adj	250	1695	161	309	1489	227	175	346	268	210	504	209	3548
	%	4.87	18.35	3.01	5.78	28.55	4.24	3.27	6.47	5.03	5.88	10.38	3.87	
Adj (7:45-8:00)	Car	384	985	154	335	1632	252	182	358	288	380	643	215	3828
	Peds			0			0			0			0	0



**DIAMOND TRAFFIC
CHRONOS REPORT TITLE**

 Blaine Major
Utah Department of Transportation

 Page: 1
Date: 08/03/07

Location: Sr-154 & 9000 So.

Notes: left turn study

Study ID: 3-206

Operator: Tw

Weather:

Interval: 15 min Intervals: 8

S/N: 4335

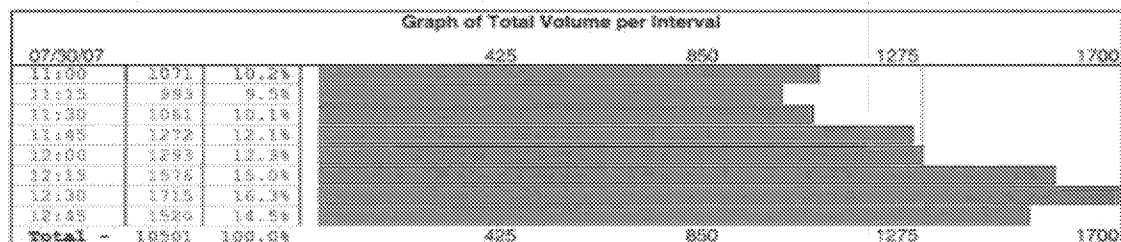
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Starts: 07/30/07 at 11:00

Ends: 07/30/07 at 13:00

Type: Open Car, Pedestrian
(Study Type 1)

		From North			From South			From East			From West			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00	Car	89	188	30	41	154	48	43	147	98	46	108	76	1570
	Peds													1
11:15	Car	42	248	32	8	134	35	41	127	85	49	82	77	985
	Peds													0
11:30	Car	47	288	12	79	187	31	37	190	79	31	125	39	1581
	Peds													0
11:45	Car	104	244	40	80	208	36	104	164	100	46	100	38	1872
	Peds													0
Hour	Car	288	948	115	172	945	150	225	906	375	172	385	238	4386
	Peds													1
	Ax	288	948	115	172	945	150	225	906	375	172	385	238	4386
	%	8.10	27.67	3.34	3.91	14.97	0.95	5.92	13.83	6.30	3.91	8.78	5.43	
12:00	Car	104	233	32	53	208	31	89	188	117	46	140	84	1580
	Peds													0
12:15	Car	136	335	40	58	238	47	89	287	187	42	167	87	1879
	Peds													0
12:30	Car	94	273	79	94	249	37	37	297	148	46	248	91	1719
	Peds													0
12:45	Car	78	283	75	81	281	35	182	283	100	58	108	80	1620
	Peds													0
Hour	Car	380	1114	237	264	977	210	349	948	544	191	683	242	3104
	Peds													0
	Ax	380	1114	237	264	977	210	349	948	544	191	683	242	3104
	%	8.23	18.35	3.72	4.39	18.01	3.44	5.69	15.55	8.91	3.13	10.38	5.86	
AM (11:00-12:00)	Car	348	948	115	172	945	150	225	896	375	172	385	238	4386
	Peds													1
PM (12:00-13:00)	Car	348	1114	237	264	977	210	349	948	544	191	683	242	3104
	Peds													0



DIAMOND TRAFFIC
CHRONOS REPORT TITLE

Blaine Major
Utah Department of Transportation

Page: 1
Date: 08/03/07

Location : Sr-154 & 9000 So.

Starts : 08/01/07 at 15:00

Notes : left turn study

Ends : 08/01/07 at 18:00

Study ID : 2-213

Interval : 15 min

Intervals : 12

Operator: Tw

S/N : 4335

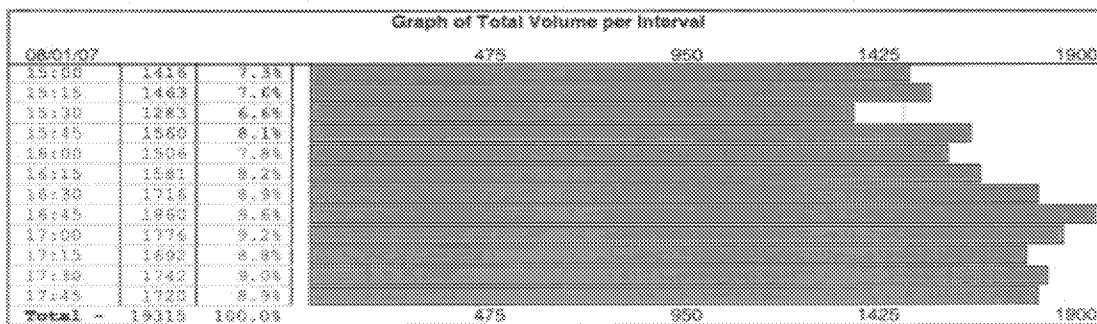
Type : Open Car, Pedestrian

Weather :

Correction : 1.0

(Study Type 1)

		From North			From South			From East			From West			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
15:00	Cars	82	227	41	85	282	28	72	195	54	89	113	75	1416
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	Cars	60	266	53	58	346	25	78	283	71	67	169	37	1463
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	Cars	77	289	30	14	285	14	80	215	75	70	183	28	1583
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	Cars	101	308	58	75	258	56	118	298	113	41	180	67	1538
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	Cars	320	1118	189	230	1285	144	320	821	348	208	544	205	9721
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
	AV	320	1118	189	230	1285	144	320	821	348	208	544	205	9721
	%	9.58	18.54	3.59	4.82	31.88	2.50	9.83	54.65	5.05	4.16	16.51	3.88	
16:00	Cars	21	449	4	0	442	19	110	217	2	94	151	0	1086
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	Cars	97	289	73	156	289	84	84	284	85	94	167	25	1581
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	Cars	85	319	80	49	411	67	187	277	75	86	91	82	1736
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	Cars	100	391	74	113	346	29	223	275	88	81	147	79	1882
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	Cars	303	1475	233	388	1497	206	493	894	245	288	486	231	9863
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
	AV	303	1475	233	388	1497	206	493	894	245	288	486	231	9863
	%	4.35	22.14	3.59	5.88	32.47	3.14	8.82	15.42	3.73	5.37	7.48	3.47	
17:00	Cars	78	388	88	90	288	101	76	278	128	54	158	85	1776
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	Cars	130	434	54	80	338	47	118	175	30	95	111	65	1882
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	Cars	22	491	81	118	383	25	180	180	81	91	100	49	1742
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	Cars	82	488	40	75	391	32	170	188	89	98	81	55	1723
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	Cars	278	1709	268	379	1282	205	529	789	271	336	451	245	9882
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0
	AV	278	1709	268	379	1282	205	529	789	271	336	451	245	9882
	%	8.24	24.95	3.84	5.47	18.92	2.95	7.92	11.12	5.32	4.88	6.37	3.54	
PM (16:00-17:00)	Cars	378	1634	287	421	1297	212	477	877	379	321	517	289	7670
	Peaks	0	0	0	0	0	0	0	0	0	0	0	0	0



UTAH DEPARTMENT OF TRANSPORTATION - SPOT SPEED STUDY FIELD DATA SHEET

SP-1531	60	1110	Scale
2218	2000 ft	7/21/63	Station
	1110	1110	City
	1110	1110	Section
	1110	1110	Project
	1110	1110	Notes

Miles Per Hour

40
30
20
10
0

0 5 10 15 20 25 30 35 40

Total

***** PROJECT INFORMATION *****

Study No.: 3-213-07
Location: SR-154 & 9000 S, Salt Lake

745 - 845

	Southbound			Northbound			Westbound			Eastbound			
	L	TH	R	L	TH	R	L	TH	R	L	TH	R	
peak hr	378	1034	297	421	1287	312	477	877	370	321	817	299	7070
pk 15 min	100	381	74	117	345	76	122	276	69	91	147	79	1580
PHF	0.99	1.04	1.00	0.99	0.94	1.35	0.98	0.79	1.05	0.99	0.88	0.85	0.95

7855 S

	Southbound			Northbound			Westbound			Eastbound			
	L	TH	R	L	TH	R	L	TH	R	L	TH	R	
peak hr													0
pk 15 min													0
PHF	####	####	#DIV/0!	####	####	#DIV/0!	#DIV/0!	#DIV/0!	####	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Accident Rate Calculation - Left turn Analysis

Year	Accident Type					ADT for		Crash Rate
	L	TH	R	L	TH	Total	ADT	
2000	10	0	0	0	0	10	7655	0.30
2004	1	0	0	0	0	1	7855	0.17
2005	5	0	0	0	0	5	7855	0.17
						20 = 200,000		0.20

3yr Accident Rate for Intersection: 0.20

Lanes, Volumes, Timings
3: 9000 South & Bangenter Highway

Existing Conditions
1/1/2000



Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15	15	15	15	15	15	15	15	15	15	15
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	1.00
RT			0.850			0.850			0.850		0.850
P% Protected	0.950			0.950			0.950			0.950	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3433	5085
P% Permitted	0.222			0.152			0.950			0.950	
Satd. Flow (perm)	414	3539	1583	339	3539	1583	3433	5085	1583	3433	5085
Right Turn on Red		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		224			264			228			282
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			55			55
Link Distance (ft)		1550			1320			7500			7500
Travel Time (s)		33.5			32.5			98.2			98.2
Volume (vph)	350	564	260	520	565	403	459	1403	231	412	1761
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	513	318	565	1039	438	499	1525	251	448	1938
Lane Group Flow (vph)	380	513	318	565	1039	438	499	1525	251	448	1938
Turn Type	propt		Permt	propt		Free	Propt		Permt	Propt	Permt
Protected Phases	3	4		3	5		5	2		1	5
Permitted Phases	4		4	5		Free			2		5
Minimum Split (s)	5.0	20.0	20.0	5.0	20.0		5.0	20.0	20.0	5.0	20.0
Total Split (s)	21.0	22.0	22.0	33.0	34.0	0.0	19.0	45.0	45.0	20.0	45.0
Total Split (%)	17.5%	18.3%	18.3%	27.5%	28.3%	0.0%	15.8%	37.5%	37.5%	16.7%	38.3%
Maximum Green (s)	17.0	16.0	16.0	29.0	30.0		15.0	41.0	41.0	16.0	42.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Walk Time (s)		5.0	5.0		5.0			5.0	5.0		5.0
Flash Cont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0
Pedestrian Cals (#/hr)		0	0		0			0	0		0
Act Effat Green (s)	35.0	16.0	16.0	51.0	30.0	120.0	15.0	41.0	41.0	16.0	42.0
Actuated g/C Ratio	0.29	0.18	0.18	0.42	0.25	1.00	0.12	0.34	0.34	0.13	0.35
v/c Ratio	1.21	1.15	0.74	1.15	1.17	0.35	1.18	0.55	0.35	0.98	1.09
Control Delay	154.2	134.5	26.8	122.3	130.5	0.4	142.3	44.1	5.8	89.1	86.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.2	134.5	26.8	122.3	130.5	0.4	142.3	44.1	5.8	89.1	86.9
LCS	F	F	C	F	F	A	F	D	A	F	F
Approach Delay		114.0			100.5			61.5		77.5	
Approach LCS		F			F			D		E	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 50 (42%). Referenced to phase 2 NBT and 5 SBT, Start of Green

Existing PM: 7/17/2005 Baseline
City of West JordanSynchro 8 Report
Page 1

Lanes, Volumes, Timings

3: 9000 South & Bangenter Highway

1/1/2000

Natural Cycle: 119

Control Type: Pretimed

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 55.1

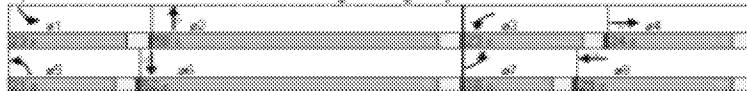
Intersection LCS: E

Intersection Capacity Utilization: 91.3%

ICU Level of Service: F













Analysis Period (min): 15

Splits and Phases: 3: 9000 South & Bangenter Highway



Lanes, Volumes, Timings
3: 9000 South & Bangerter Highway

1/1/2000

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	TT	T	TT	TTT	T	TT	TTT	T	TT	TTT	T
Peak Flow (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Phi			0.950			0.950			0.950			0.950
Phi Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	5065	1583	3433	5065	1583	3433	5065	1583
Phi Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5065	1583	3433	5065	1583	3433	5065	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			340			345			340			373
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			55			55	
Link Distance (ft)		1950			1320			7920			7920	
Travel Time (s)		33.2			22.5			95.2			95.2	
Volume (vph)	350	564	293	520	955	403	459	1403	231	412	1751	324
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	613	318	565	1039	438	489	1525	251	448	1935	352
Lane Group Flow (vph)	350	613	318	565	1039	438	489	1525	251	448	1935	352
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	5		5	2		1	6	
Permitted Phases			4			5			2			5
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0

1 Green to Print (s)	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	15.0%	20.0%	20.0%	19.2%	24.2%	24.2%	17.5%	41.7%	41.7%	19.2%	43.3%	43.3%		
Maximum Green (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	46.0	46.0	19.0	46.0	46.0		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
Lead-Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0		
Pedestrian Cals (ft/hr)		0	0		0	0		0	0		0	0		
Act Effct Green (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	46.0	46.0	19.0	46.0	46.0		
Actuated g/C Ratio	0.12	0.17	0.17	0.16	0.21	0.21	0.14	0.36	0.36	0.16	0.40	0.40		
v/c Ratio	0.95	1.04	0.89	1.04	0.98	0.83	1.03	0.76	0.33	0.82	0.95	0.44		
Control Delay	85.4	95.2	20.9	98.1	70.9	34.8	98.3	35.1	4.9	82.5	45.5	5.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	85.4	95.2	20.9	98.1	70.9	34.8	98.3	35.1	4.9	82.5	45.5	5.0		
LOS	F	F	C	F	E	C	F	D	A	E	D	A		
Approach Delay		75.1			70.6			45.3			44.3			
Approach LOS		E			E			D			D			

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 60 (43%), Referenced to phase 2-NST and 5-SST, Start of Green

Existing PM: 7/17/2008 Baseline
City of West JordanSynchro 6 Report
Page 1

Lanes, Volumes, Timings

3: 8000 South & Bangerter Highway

1/1/2000

Natural Cycle: 110

Control Type: Pre-timed

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 55.1

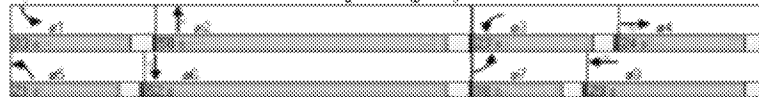
Intersection LOS: E

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (Print): 15

Splits and Phases: 3: 8000 South & Bangerter Highway



Lanes, Volumes, Timings
3: 9000 South & Bangenter Highway

Proposed Improved
1/1/2000

	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Lane Group	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Lane Configurations	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Design Flow (veh/h)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15	15	15	15	15	15	15	15	15	15	15	15
Lane Util. Factor	0.97	0.98	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
PH	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Pt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433
Pt Permitted	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (perm)	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433	3433
Right Turn on Red	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)	340	340	340	340	340	340	340	340	340	340	340	340
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	40	40	40	40	40	40	40	40	40	40	40	40
Link Distance (ft)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Travel Time (s)	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
Volume (vph)	350	350	350	350	350	350	350	350	350	350	350	350
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	380	380	380	380	380	380	380	380	380	380	380
Lane Group Flow (vph)	380	380	380	380	380	380	380	380	380	380	380	380
Turn Type	Prot	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Prot
Protected Phases	7	4	4	3	8	5	2	2	1	8	5	8
Permitted Phases	7	4	4	3	8	5	2	2	1	8	5	8
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	18.0	24.0	24.0	23.0	29.0	29.0	21.0	30.0	30.0	23.0	30.0	30.0
Total Split (%)	15.0%	20.0%	20.0%	19.2%	24.2%	24.2%	17.5%	25.0%	25.0%	19.2%	25.0%	25.0%
Maximum Green (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	25.0	25.0	19.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead-Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Cals (ft/s)	0	0	0	0	0	0	0	0	0	0	0	0
Adj Effct Green (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	25.0	25.0	19.0	25.0	25.0
Actuated g/C Ratio	0.12	0.17	0.17	0.18	0.21	0.21	0.14	0.38	0.38	0.18	0.40	0.40
v/c Ratio	0.95	1.04	0.99	1.04	0.95	0.93	1.03	0.78	0.33	0.95	0.95	0.95
Control Delay	88.4	96.2	96.2	96.1	70.8	70.8	98.3	36.1	4.8	82.8	48.8	80.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.4	96.2	96.2	96.1	70.8	70.8	98.3	36.1	4.8	82.8	48.8	80.0
LOS	F	F	C	F	E	C	F	D	A	E	D	A
Approach Delay	75.1	75.1	75.1	70.8	70.8	70.8	46.3	46.3	46.3	44.3	44.3	44.3
Approach LOS	E	E	E	E	E	E	D	D	D	D	D	D

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2/NSB and 6/SSB, Start of Green

Existing PM: 7/17/2008 Baseline
City of West Jordan

Synchro 6 Report
Page 1

Lanes, Volumes, Timings
3: 9000 South & Bangerter Highway

Proposed Improved
7/17/2008

Natural Cycle: 110

Control Type: Prelimed

Maximum V/L Ratio: 1.04

Intersection Signal Delay: 55.1

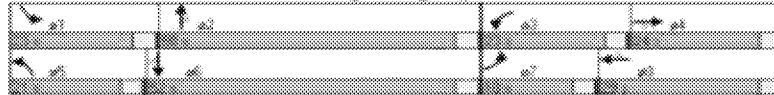
Intersection LOS: E

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (min): 15

Splits and Phases: 3: 9000 South & Bangerter Highway



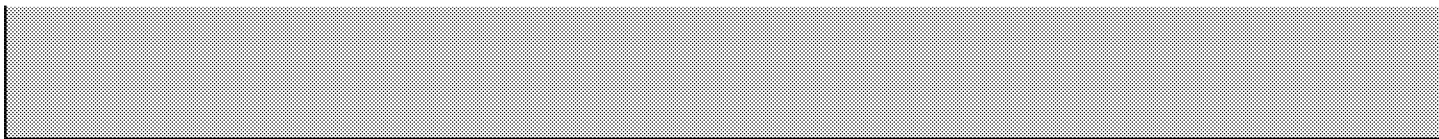
HCM Signalized Intersection Capacity Analysis 3. 9000 South & Bangor Highway

Proposed Improved
1/1/2000

Movement	ESL	ESR	ESL	WSL	WSR	WSL	ESL	ESR	ESL	WSL	WSR	ESL
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.96	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Pk	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95
Pk Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1563	3433	5065	1563	3433	5065	1563	3433	5065	1563
Pk Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1563	3433	5065	1563	3433	5065	1563	3433	5065	1563
Volume (vph)	380	554	293	520	858	403	489	1403	231	412	1781	324
Peak-hour factor, PkH	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	513	318	565	1039	438	489	1525	251	448	1938	350
RTOR Reduction (vph)	0	0	200	0	0	165	0	0	145	0	0	164
Lane Group Flow (vph)	380	513	318	565	1039	243	489	1525	103	448	1938	185
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		5	5		5	2		1	5	
Permitted Phases			4			5			2			5
Actuated Green, G (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	48.0	48.0	19.0	48.0	48.0
Effective Green, g (s)	14.0	20.0	20.0	19.0	25.0	25.0	17.0	48.0	48.0	19.0	48.0	48.0
Actuated g/C Ratio	0.12	0.17	0.17	0.18	0.21	0.21	0.14	0.38	0.38	0.18	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	401	590	284	544	1058	330	485	1949	507	544	2034	633
v/c Ratio Prot	0.11	0.17		0.18	0.20		0.15	0.30		0.13	0.38	
v/c Ratio Perm			0.20			0.28			0.18			0.22
v/c Ratio	0.95	1.04	0.48	1.04	0.95	0.74	1.03	0.78	0.17	0.83	0.95	0.30
Uniform Delay, d1	52.5	50.0	48.0	50.5	47.3	44.4	51.5	32.5	34.4	48.9	34.9	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.5	47.5	5.4	48.0	23.5	13.7	47.5	3.2	0.6	13.2	11.4	1.2
Delay (s)	86.2	97.5	53.4	98.5	70.7	58.1	99.3	35.8	25.0	62.1	46.3	25.7
Level of Service	F	F	D	F	E	E	F	C	C	E	D	C
Approach Delay (s)		52.5			70.7			46.5			46.3	
Approach LOS		F			E			D			D	
Intersection Summary												
HCM Average Control Delay	55.5			HCM Level of Service			E					
HCM Volume to Capacity ratio	1.01											
Actuated Cycle Length (s)	120.0			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	91.3%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

Existing PkH 7/17/2006 Baseline
City of West Jordan

Synchro 5 Report
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START Rates: Calculated using an "Inventory" run for the CMAQ year. After completing the run, f
Distance Rates (aka "Running" rates): Same source as Start Rates.

Index	County	MOVESRunID	yearID	CountyID	countyName	sourceTypeID
BE_2025_2_11	BE	3	2025	49057	Weber County	11
BE_2025_3_11	BE	3	2025	49057	Weber County	11
BE_2025_87_11	BE	3	2025	49057	Weber County	11
BE_2025_90_11	BE	3	2025	49057	Weber County	11
BE_2025_100_11	BE	3	2025	49057	Weber County	11
BE_2025_106_11	BE	3	2025	49057	Weber County	11
BE_2025_107_11	BE	3	2025	49057	Weber County	11
BE_2025_110_11	BE	3	2025	49057	Weber County	11
BE_2025_116_11	BE	3	2025	49057	Weber County	11
BE_2025_117_11	BE	3	2025	49057	Weber County	11
BE_2025_2_21	BE	3	2025	49057	Weber County	21
BE_2025_3_21	BE	3	2025	49057	Weber County	21
BE_2025_87_21	BE	3	2025	49057	Weber County	21
BE_2025_90_21	BE	3	2025	49057	Weber County	21
BE_2025_100_21	BE	3	2025	49057	Weber County	21
BE_2025_106_21	BE	3	2025	49057	Weber County	21
BE_2025_107_21	BE	3	2025	49057	Weber County	21
BE_2025_110_21	BE	3	2025	49057	Weber County	21
BE_2025_116_21	BE	3	2025	49057	Weber County	21
BE_2025_117_21	BE	3	2025	49057	Weber County	21
BE_2025_2_31	BE	3	2025	49057	Weber County	31
BE_2025_3_31	BE	3	2025	49057	Weber County	31
BE_2025_87_31	BE	3	2025	49057	Weber County	31
BE_2025_90_31	BE	3	2025	49057	Weber County	31
BE_2025_100_31	BE	3	2025	49057	Weber County	31
BE_2025_106_31	BE	3	2025	49057	Weber County	31
BE_2025_107_31	BE	3	2025	49057	Weber County	31
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BE_2025_2_32	BE	3	2025	49057	Weber County	32
BE_2025_3_32	BE	3	2025	49057	Weber County	32
BE_2025_87_32	BE	3	2025	49057	Weber County	32
BE_2025_90_32	BE	3	2025	49057	Weber County	32
BE_2025_100_32	BE	3	2025	49057	Weber County	32
BE_2025_106_32	BE	3	2025	49057	Weber County	32
BE_2025_107_32	BE	3	2025	49057	Weber County	32
BE_2025_110_32	BE	3	2025	49057	Weber County	32
BE_2025_116_32	BE	3	2025	49057	Weber County	32
BE_2025_117_32	BE	3	2025	49057	Weber County	32
BE_2025_2_41	BE	3	2025	49057	Weber County	41
BE_2025_3_41	BE	3	2025	49057	Weber County	41

from the MOVES GUI under "Post Processing" select the "Run MySQL Script on Output Database" option. Then run

sourceTypeName	pollutantID	pollutantName	ALL_gpm	Run_gpm
Motorcycle	2	Carbon Monoxide (CO)	17.30929	11.786244
Motorcycle	3	Oxides of Nitrogen (NOx)	0.850173	0.726929
Motorcycle	87	Volatile Organic Compounds	3.750812	0.597152
Motorcycle	90	Atmospheric CO2	428.112915	377.417908
Motorcycle	100	Primary Exhaust PM10 - Total	0.036212	0.030538
Motorcycle	106	Primary PM10 - Brakewear Particulate	0.020873	0.020873
Motorcycle	107	Primary PM10 - Tirewear Particulate	0.005122	0.005122
Motorcycle	110	Primary Exhaust PM2.5 - Total	0.032034	0.027014
Motorcycle	116	Primary PM2.5 - Brakewear Particulate	0.002609	0.002609
Motorcycle	117	Primary PM2.5 - Tirewear Particulate	0.000768	0.000768
Passenger Car	2	Carbon Monoxide (CO)	4.683736	1.499893
Passenger Car	3	Oxides of Nitrogen (NOx)	0.251554	0.116092
Passenger Car	87	Volatile Organic Compounds	0.477905	0.017272
Passenger Car	90	Atmospheric CO2	318.645844	279.502991
Passenger Car	100	Primary Exhaust PM10 - Total	0.017504	0.006658
Passenger Car	106	Primary PM10 - Brakewear Particulate	0.035919	0.035919
Passenger Car	107	Primary PM10 - Tirewear Particulate	0.010241	0.010241
Passenger Car	110	Primary Exhaust PM2.5 - Total	0.015486	0.005891
Passenger Car	116	Primary PM2.5 - Brakewear Particulate	0.00449	0.00449
Passenger Car	117	Primary PM2.5 - Tirewear Particulate	0.001536	0.001536
Passenger Truck	2	Carbon Monoxide (CO)	5.384439	2.123576
Passenger Truck	3	Oxides of Nitrogen (NOx)	0.543812	0.346828
Passenger Truck	87	Volatile Organic Compounds	0.560715	0.062647
Passenger Truck	90	Atmospheric CO2	448.078247	405.977386
Passenger Truck	100	Primary Exhaust PM10 - Total	0.02581	0.013033
Passenger Truck	106	Primary PM10 - Brakewear Particulate	0.040012	0.040012
Passenger Truck	107	Primary PM10 - Tirewear Particulate	0.010751	0.010751
Passenger Truck	110	Primary Exhaust PM2.5 - Total	0.023016	0.011704
Passenger Truck	116	Primary PM2.5 - Brakewear Particulate	0.005002	0.005002
Passenger Truck	117	Primary PM2.5 - Tirewear Particulate	0.001613	0.001613
Light Commercial Truck	2	Carbon Monoxide (CO)	5.791959	2.170826
Light Commercial Truck	3	Oxides of Nitrogen (NOx)	0.564716	0.353784
Light Commercial Truck	87	Volatile Organic Compounds	0.587033	0.063484
Light Commercial Truck	90	Atmospheric CO2	444.249146	398.739288
Light Commercial Truck	100	Primary Exhaust PM10 - Total	0.028753	0.014639
Light Commercial Truck	106	Primary PM10 - Brakewear Particulate	0.040239	0.040239
Light Commercial Truck	107	Primary PM10 - Tirewear Particulate	0.01081	0.01081
Light Commercial Truck	110	Primary Exhaust PM2.5 - Total	0.025681	0.013185
Light Commercial Truck	116	Primary PM2.5 - Brakewear Particulate	0.00503	0.00503
Light Commercial Truck	117	Primary PM2.5 - Tirewear Particulate	0.001622	0.001622
Intercity Bus	2	Carbon Monoxide (CO)	1.246157	1.186081
Intercity Bus	3	Oxides of Nitrogen (NOx)	4.800949	4.79844

Start_gps	Evap_gpm	Evap_gph	Extidle_gph	Refuel_gpv
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179.59935	NULL	NULL	NULL	NULL
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6.71477	NULL	NULL	NULL	NULL
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BE_2025_87_41	BE	3	2025	49057 Weber County	41
BE_2025_90_41	BE	3	2025	49057 Weber County	41
BE_2025_100_41	BE	3	2025	49057 Weber County	41
BE_2025_106_41	BE	3	2025	49057 Weber County	41
BE_2025_107_41	BE	3	2025	49057 Weber County	41
BE_2025_110_41	BE	3	2025	49057 Weber County	41
BE_2025_116_41	BE	3	2025	49057 Weber County	41
BE_2025_117_41	BE	3	2025	49057 Weber County	41
BE_2025_2_42	BE	3	2025	49057 Weber County	42
BE_2025_3_42	BE	3	2025	49057 Weber County	42
BE_2025_87_42	BE	3	2025	49057 Weber County	42
BE_2025_90_42	BE	3	2025	49057 Weber County	42
BE_2025_100_42	BE	3	2025	49057 Weber County	42
BE_2025_106_42	BE	3	2025	49057 Weber County	42
BE_2025_107_42	BE	3	2025	49057 Weber County	42
BE_2025_110_42	BE	3	2025	49057 Weber County	42
BE_2025_116_42	BE	3	2025	49057 Weber County	42
BE_2025_117_42	BE	3	2025	49057 Weber County	42
BE_2025_2_43	BE	3	2025	49057 Weber County	43
BE_2025_3_43	BE	3	2025	49057 Weber County	43
BE_2025_87_43	BE	3	2025	49057 Weber County	43
BE_2025_90_43	BE	3	2025	49057 Weber County	43
BE_2025_100_43	BE	3	2025	49057 Weber County	43
BE_2025_106_43	BE	3	2025	49057 Weber County	43
BE_2025_107_43	BE	3	2025	49057 Weber County	43
BE_2025_110_43	BE	3	2025	49057 Weber County	43
BE_2025_116_43	BE	3	2025	49057 Weber County	43
BE_2025_117_43	BE	3	2025	49057 Weber County	43
BE_2025_2_51	BE	3	2025	49057 Weber County	51
BE_2025_3_51	BE	3	2025	49057 Weber County	51
BE_2025_87_51	BE	3	2025	49057 Weber County	51
BE_2025_90_51	BE	3	2025	49057 Weber County	51
BE_2025_100_51	BE	3	2025	49057 Weber County	51
BE_2025_106_51	BE	3	2025	49057 Weber County	51
BE_2025_107_51	BE	3	2025	49057 Weber County	51
BE_2025_110_51	BE	3	2025	49057 Weber County	51
BE_2025_116_51	BE	3	2025	49057 Weber County	51
BE_2025_117_51	BE	3	2025	49057 Weber County	51
BE_2025_2_52	BE	3	2025	49057 Weber County	52
BE_2025_3_52	BE	3	2025	49057 Weber County	52
BE_2025_87_52	BE	3	2025	49057 Weber County	52
BE_2025_90_52	BE	3	2025	49057 Weber County	52
BE_2025_100_52	BE	3	2025	49057 Weber County	52
BE_2025_106_52	BE	3	2025	49057 Weber County	52
BE_2025_107_52	BE	3	2025	49057 Weber County	52
BE_2025_110_52	BE	3	2025	49057 Weber County	52
BE_2025_116_52	BE	3	2025	49057 Weber County	52

Intercity Bus	87 Volatile Organic Compounds	0.315724	0.252911
Intercity Bus	90 Atmospheric CO2	1788.672485	1786.843262
Intercity Bus	100 Primary Exhaust PM10 - Total	0.195423	0.195359
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.204017	0.204017
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027789	0.027789
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.17979	0.179731
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.025503	0.025503
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004167	0.004167
Transit Bus	2 Carbon Monoxide (CO)	2.039165	1.78109
Transit Bus	3 Oxides of Nitrogen (NOx)	2.940404	2.939936
Transit Bus	87 Volatile Organic Compounds	0.255902	0.193556
Transit Bus	90 Atmospheric CO2	1293.956055	1289.578003
Transit Bus	100 Primary Exhaust PM10 - Total	0.06073	0.06051
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.138732	0.138732
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018704	0.018704
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.055748	0.055548
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.017341	0.017341
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002806	0.002806
School Bus	2 Carbon Monoxide (CO)	1.879448	0.975647
School Bus	3 Oxides of Nitrogen (NOx)	2.527283	2.522699
School Bus	87 Volatile Organic Compounds	0.377858	0.256818
School Bus	90 Atmospheric CO2	980.543091	963.667786
School Bus	100 Primary Exhaust PM10 - Total	0.120058	0.119299
School Bus	106 Primary PM10 - Brakewear Particulate	0.115671	0.115671
School Bus	107 Primary PM10 - Tirewear Particulate	0.016867	0.016867
School Bus	110 Primary Exhaust PM2.5 - Total	0.110397	0.109705
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.014459	0.014459
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00253	0.00253
Refuse Truck	2 Carbon Monoxide (CO)	0.986933	0.598092
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.409809	2.407761
Refuse Truck	87 Volatile Organic Compounds	0.193358	0.094945
Refuse Truck	90 Atmospheric CO2	1813.31958	1805.780029
Refuse Truck	100 Primary Exhaust PM10 - Total	0.076831	0.076475
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.223857	0.223857
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033873	0.033873
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.070647	0.070325
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.027982	0.027982
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005081	0.005081
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.301142	1.958562
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.382086	1.272027
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.367498	0.123323
Single Unit Short-haul Truck	90 Atmospheric CO2	1095.784668	1075.227661
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040731	0.036293
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.132292	0.132292
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016447	0.016447
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037022	0.033081
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.016536	0.016536

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BE_2025_117_52	BE	3	2025	49057 Weber County	52
BE_2025_2_53	BE	3	2025	49057 Weber County	53
BE_2025_3_53	BE	3	2025	49057 Weber County	53
BE_2025_87_53	BE	3	2025	49057 Weber County	53
BE_2025_90_53	BE	3	2025	49057 Weber County	53
BE_2025_100_53	BE	3	2025	49057 Weber County	53
BE_2025_106_53	BE	3	2025	49057 Weber County	53
BE_2025_107_53	BE	3	2025	49057 Weber County	53
BE_2025_110_53	BE	3	2025	49057 Weber County	53
BE_2025_116_53	BE	3	2025	49057 Weber County	53
BE_2025_117_53	BE	3	2025	49057 Weber County	53
BE_2025_2_54	BE	3	2025	49057 Weber County	54
BE_2025_3_54	BE	3	2025	49057 Weber County	54
BE_2025_87_54	BE	3	2025	49057 Weber County	54
BE_2025_90_54	BE	3	2025	49057 Weber County	54
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BE_2025_106_54	BE	3	2025	49057 Weber County	54
BE_2025_107_54	BE	3	2025	49057 Weber County	54
BE_2025_110_54	BE	3	2025	49057 Weber County	54
BE_2025_116_54	BE	3	2025	49057 Weber County	54
BE_2025_117_54	BE	3	2025	49057 Weber County	54
BE_2025_2_61	BE	3	2025	49057 Weber County	61
BE_2025_3_61	BE	3	2025	49057 Weber County	61
BE_2025_87_61	BE	3	2025	49057 Weber County	61
BE_2025_90_61	BE	3	2025	49057 Weber County	61
BE_2025_100_61	BE	3	2025	49057 Weber County	61
BE_2025_106_61	BE	3	2025	49057 Weber County	61
BE_2025_107_61	BE	3	2025	49057 Weber County	61
BE_2025_110_61	BE	3	2025	49057 Weber County	61
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Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002467	0.002467
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.079375	0.63414
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.31502	1.276586
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.193635	0.102176
Single Unit Long-haul Truck	90 Atmospheric CO2	1033.270874	1023.618347
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.042245	0.041385
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.159993	0.159993
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019866	0.019866
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03876	0.037989
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019999	0.019999
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.00298	0.00298
Motor Home	2 Carbon Monoxide (CO)	30.876877	18.484182
Motor Home	3 Oxides of Nitrogen (NOx)	3.931233	3.711928
Motor Home	87 Volatile Organic Compounds	1.651193	0.640733
Motor Home	90 Atmospheric CO2	1170.648071	1136.189453
Motor Home	100 Primary Exhaust PM10 - Total	0.251637	0.23489
Motor Home	106 Primary PM10 - Brakewear Particulate	0.118276	0.118276
Motor Home	107 Primary PM10 - Tirewear Particulate	0.015021	0.015021
Motor Home	110 Primary Exhaust PM2.5 - Total	0.226233	0.211397
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.014785	0.014785
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002253	0.002253
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.742428	0.542075
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.293984	2.293981
Combination Short-haul Truck	87 Volatile Organic Compounds	0.178931	0.092103
Combination Short-haul Truck	90 Atmospheric CO2	1793.046387	1788.102295
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.067009	0.066818
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.211004	0.211004
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.030108	0.030108
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.061648	0.061473
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.026375	0.026375
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004516	0.004516
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.762888	0.675676
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.99476	2.99476
Combination Long-haul Truck	87 Volatile Organic Compounds	0.186802	0.117751
Combination Long-haul Truck	90 Atmospheric CO2	1851.903687	1849.599854
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.103104	0.103021
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.229908	0.229908
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033707	0.033707
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.094855	0.094779
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.028739	0.028739
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005056	0.005056
Motorcycle	2 Carbon Monoxide (CO)	16.925747	12.060104
Motorcycle	3 Oxides of Nitrogen (NOx)	0.890275	0.781404
Motorcycle	87 Volatile Organic Compounds	3.273868	0.569847
Motorcycle	90 Atmospheric CO2	428.816254	384.152954
Motorcycle	100 Primary Exhaust PM10 - Total	0.037072	0.032075
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.017567	0.017567

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Motorcycle	107 Primary PM10 - Tirewear Particulate	0.004829	0.004829
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.032794	0.028374
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002196	0.002196
Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000724	0.000724
Passenger Car	2 Carbon Monoxide (CO)	4.095838	1.418569
Passenger Car	3 Oxides of Nitrogen (NOx)	0.213126	0.101602
Passenger Car	87 Volatile Organic Compounds	0.394645	0.014571
Passenger Car	90 Atmospheric CO2	303.906921	270.0383
Passenger Car	100 Primary Exhaust PM10 - Total	0.014507	0.005829
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.030397	0.030397
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.009657	0.009657
Passenger Car	110 Primary Exhaust PM2.5 - Total	0.012834	0.005158
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.0038	0.0038
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001449	0.001449
Passenger Truck	2 Carbon Monoxide (CO)	4.642765	1.946034
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.422671	0.272049
Passenger Truck	87 Volatile Organic Compounds	0.444492	0.044042
Passenger Truck	90 Atmospheric CO2	413.140198	376.31015
Passenger Truck	100 Primary Exhaust PM10 - Total	0.021466	0.010786
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.033732	0.033732
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.009986	0.009986
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.019091	0.009639
Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.004217	0.004217
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001498	0.001498
Light Commercial Truck	2 Carbon Monoxide (CO)	5.016356	1.988654
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.444662	0.279812
Light Commercial Truck	87 Volatile Organic Compounds	0.472046	0.045048
Light Commercial Truck	90 Atmospheric CO2	411.448578	371.582001
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.022849	0.01105
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.03398	0.03398
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.010074	0.010074
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.020335	0.009892
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.004248	0.004248
Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001511	0.001511
Intercity Bus	2 Carbon Monoxide (CO)	1.205734	1.151113
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.630745	4.628464
Intercity Bus	87 Volatile Organic Compounds	0.302381	0.24243
Intercity Bus	90 Atmospheric CO2	1718.959351	1717.30188
Intercity Bus	100 Primary Exhaust PM10 - Total	0.184793	0.184733
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.178395	0.178395
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027362	0.027362
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.170008	0.169954
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.0223	0.0223
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004104	0.004104
Transit Bus	2 Carbon Monoxide (CO)	2.024324	1.78972
Transit Bus	3 Oxides of Nitrogen (NOx)	2.885211	2.884784
Transit Bus	87 Volatile Organic Compounds	0.250086	0.189904

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Transit Bus	90 Atmospheric CO2	1283.328003	1279.363037
Transit Bus	100 Primary Exhaust PM10 - Total	0.058298	0.058099
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.123839	0.123839
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018415	0.018415
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.053513	0.053332
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.01548	0.01548
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002762	0.002762
School Bus	2 Carbon Monoxide (CO)	1.805128	0.983412
School Bus	3 Oxides of Nitrogen (NOx)	2.427221	2.423051
School Bus	87 Volatile Organic Compounds	0.367528	0.255538
School Bus	90 Atmospheric CO2	938.491943	923.181396
School Bus	100 Primary Exhaust PM10 - Total	0.118375	0.117685
School Bus	106 Primary PM10 - Brakewear Particulate	0.107124	0.107124
School Bus	107 Primary PM10 - Tirewear Particulate	0.016608	0.016608
School Bus	110 Primary Exhaust PM2.5 - Total	0.108857	0.108228
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.01339	0.01339
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.002491	0.002491
Refuse Truck	2 Carbon Monoxide (CO)	1.024209	0.583142
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.30745	2.305126
Refuse Truck	87 Volatile Organic Compounds	0.19225	0.090567
Refuse Truck	90 Atmospheric CO2	1736.93811	1728.398193
Refuse Truck	100 Primary Exhaust PM10 - Total	0.072498	0.072095
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.194971	0.194971
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033353	0.033353
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.066664	0.066299
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.024371	0.024371
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005003	0.005003
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.805519	1.882992
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.33899	1.214088
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.37763	0.115299
Single Unit Short-haul Truck	90 Atmospheric CO2	1034.194336	1010.990662
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.039431	0.03443
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.118526	0.118526
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016195	0.016195
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03584	0.031399
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.014816	0.014816
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002429	0.002429
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.117266	0.612703
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.246237	1.202642
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.196082	0.097709
Single Unit Long-haul Truck	90 Atmospheric CO2	967.484375	956.579834
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.040656	0.039691
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.142687	0.142687
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019562	0.019562
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037307	0.036441
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.017836	0.017836
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002935	0.002935

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Motor Home	2 Carbon Monoxide (CO)	28.626043	14.888786
Motor Home	3 Oxides of Nitrogen (NOx)	3.559851	3.322405
Motor Home	87 Volatile Organic Compounds	1.574126	0.551761
Motor Home	90 Atmospheric CO2	1102.666626	1063.638672
Motor Home	100 Primary Exhaust PM10 - Total	0.213665	0.19619
Motor Home	106 Primary PM10 - Brakewear Particulate	0.10657	0.10657
Motor Home	107 Primary PM10 - Tirewear Particulate	0.014791	0.014791
Motor Home	110 Primary Exhaust PM2.5 - Total	0.192205	0.176725
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.013321	0.013321
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002219	0.002219
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.760545	0.529404
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.1989	2.198896
Combination Short-haul Truck	87 Volatile Organic Compounds	0.177745	0.087922
Combination Short-haul Truck	90 Atmospheric CO2	1717.171997	1711.484497
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.0633	0.063081
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.183568	0.183568
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.029647	0.029647
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.058236	0.058034
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.022946	0.022946
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004447	0.004447
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.759144	0.658532
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.874756	2.874756
Combination Long-haul Truck	87 Volatile Organic Compounds	0.181034	0.112544
Combination Long-haul Truck	90 Atmospheric CO2	1775.423218	1772.776123
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.096963	0.096867
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.199463	0.199463
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033191	0.033191
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.089206	0.089117
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.024933	0.024933
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004979	0.004979
Motorcycle	2 Carbon Monoxide (CO)	15.633373	11.813879
Motorcycle	3 Oxides of Nitrogen (NOx)	0.832056	0.745596
Motorcycle	87 Volatile Organic Compounds	2.731982	0.58355
Motorcycle	90 Atmospheric CO2	415.108704	379.547485
Motorcycle	100 Primary Exhaust PM10 - Total	0.034917	0.030973
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.019964	0.019964
Motorcycle	107 Primary PM10 - Tirewear Particulate	0.005055	0.005055
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.030888	0.027399
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002495	0.002495
Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000758	0.000758
Passenger Car	2 Carbon Monoxide (CO)	3.892397	1.398485
Passenger Car	3 Oxides of Nitrogen (NOx)	0.2005	0.096694
Passenger Car	87 Volatile Organic Compounds	0.360201	0.014157
Passenger Car	90 Atmospheric CO2	306.553406	274.53537
Passenger Car	100 Primary Exhaust PM10 - Total	0.013589	0.005649
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.034453	0.034453
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.010108	0.010108

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SL_2025_90_43	SL	8	2025	49035 Salt Lake County	43

Passenger Car	110 Primary Exhaust PM2.5 - Total	0.012022	0.004998
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.004307	0.004307
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001516	0.001516
Passenger Truck	2 Carbon Monoxide (CO)	3.813609	1.707959
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.32946	0.215117
Passenger Truck	87 Volatile Organic Compounds	0.322551	0.030366
Passenger Truck	90 Atmospheric CO2	412.354828	378.601196
Passenger Truck	100 Primary Exhaust PM10 - Total	0.016215	0.008165
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.038274	0.038274
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.01046	0.01046
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.014426	0.007302
Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.004784	0.004784
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001569	0.001569
Light Commercial Truck	2 Carbon Monoxide (CO)	4.129526	1.770604
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.345027	0.220018
Light Commercial Truck	87 Volatile Organic Compounds	0.344888	0.031085
Light Commercial Truck	90 Atmospheric CO2	410.825928	374.288513
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.01712	0.008222
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.038528	0.038528
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.010546	0.010546
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.015234	0.007359
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.004816	0.004816
Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001582	0.001582
Intercity Bus	2 Carbon Monoxide (CO)	1.339708	1.277856
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.893861	4.891277
Intercity Bus	87 Volatile Organic Compounds	0.285299	0.27748
Intercity Bus	90 Atmospheric CO2	1812.040771	1810.16394
Intercity Bus	100 Primary Exhaust PM10 - Total	0.211034	0.210968
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.243148	0.243148
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.030206	0.030206
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.19415	0.19409
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.030393	0.030393
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004531	0.004531
Transit Bus	2 Carbon Monoxide (CO)	2.056778	1.791116
Transit Bus	3 Oxides of Nitrogen (NOx)	2.869434	2.868951
Transit Bus	87 Volatile Organic Compounds	0.227984	0.207814
Transit Bus	90 Atmospheric CO2	1240.000732	1235.510864
Transit Bus	100 Primary Exhaust PM10 - Total	0.061261	0.061035
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.164125	0.164125
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.02033	0.02033
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.056255	0.05605
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.020516	0.020516
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.00305	0.00305
School Bus	2 Carbon Monoxide (CO)	1.929719	0.999214
School Bus	3 Oxides of Nitrogen (NOx)	2.44757	2.442848
School Bus	87 Volatile Organic Compounds	0.370221	0.279768
School Bus	90 Atmospheric CO2	937.30835	919.970886

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School Bus	100 Primary Exhaust PM10 - Total	0.127548	0.126767
School Bus	106 Primary PM10 - Brakewear Particulate	0.135391	0.135391
School Bus	107 Primary PM10 - Tirewear Particulate	0.018334	0.018334
School Bus	110 Primary Exhaust PM2.5 - Total	0.117304	0.116592
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.016924	0.016924
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00275	0.00275
Refuse Truck	2 Carbon Monoxide (CO)	1.088327	0.646227
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.481064	2.478735
Refuse Truck	87 Volatile Organic Compounds	0.152596	0.104814
Refuse Truck	90 Atmospheric CO2	1835.934082	1827.374268
Refuse Truck	100 Primary Exhaust PM10 - Total	0.082566	0.082163
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.265182	0.265182
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.036813	0.036813
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.075927	0.075561
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.033148	0.033148
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005522	0.005522
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.989503	2.055447
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.429373	1.304179
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.334061	0.136822
Single Unit Short-haul Truck	90 Atmospheric CO2	1118.869019	1095.611206
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040888	0.035876
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.155163	0.155163
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.017875	0.017875
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037235	0.032784
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019395	0.019395
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002681	0.002681
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.173996	0.668252
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.371583	1.327886
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.1866	0.112765
Single Unit Long-haul Truck	90 Atmospheric CO2	1056.62146	1045.691406
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.044213	0.043245
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.187482	0.187482
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.021591	0.021591
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.040596	0.039729
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.023435	0.023435
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.003239	0.003239
Motor Home	2 Carbon Monoxide (CO)	29.692186	15.942488
Motor Home	3 Oxides of Nitrogen (NOx)	3.671525	3.437416
Motor Home	87 Volatile Organic Compounds	1.444949	0.635881
Motor Home	90 Atmospheric CO2	1166.42395	1127.325684
Motor Home	100 Primary Exhaust PM10 - Total	0.200982	0.183303
Motor Home	106 Primary PM10 - Brakewear Particulate	0.139053	0.139053
Motor Home	107 Primary PM10 - Tirewear Particulate	0.016326	0.016326
Motor Home	110 Primary Exhaust PM2.5 - Total	0.181407	0.165747
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.017382	0.017382
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002449	0.002449
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.818672	0.586518

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TO_2025_110_31	TO	3	2025	49057 Weber County	31

Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.355409	2.355405
Combination Short-haul Truck	87 Volatile Organic Compounds	0.140845	0.101694
Combination Short-haul Truck	90 Atmospheric CO2	1815.68396	1809.971436
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.072155	0.071935
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.24944	0.24944
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.032723	0.032723
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.066382	0.06618
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.03118	0.03118
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004908	0.004908
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.830349	0.729295
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	3.080512	3.080512
Combination Long-haul Truck	87 Volatile Organic Compounds	0.143115	0.129354
Combination Long-haul Truck	90 Atmospheric CO2	1881.586426	1878.92749
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.111085	0.110988
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.271719	0.271719
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.036635	0.036635
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.102198	0.102109
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.033965	0.033965
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005495	0.005495
Motorcycle	2 Carbon Monoxide (CO)	17.30929	11.786244
Motorcycle	3 Oxides of Nitrogen (NOx)	0.850173	0.726929
Motorcycle	87 Volatile Organic Compounds	3.750812	0.597152
Motorcycle	90 Atmospheric CO2	428.112915	377.417908
Motorcycle	100 Primary Exhaust PM10 - Total	0.036212	0.030538
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.020873	0.020873
Motorcycle	107 Primary PM10 - Tirewear Particulate	0.005122	0.005122
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.032034	0.027014
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002609	0.002609
Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000768	0.000768
Passenger Car	2 Carbon Monoxide (CO)	4.683736	1.499893
Passenger Car	3 Oxides of Nitrogen (NOx)	0.251554	0.116092
Passenger Car	87 Volatile Organic Compounds	0.477905	0.017272
Passenger Car	90 Atmospheric CO2	318.645844	279.502991
Passenger Car	100 Primary Exhaust PM10 - Total	0.017504	0.006658
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.035919	0.035919
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.010241	0.010241
Passenger Car	110 Primary Exhaust PM2.5 - Total	0.015486	0.005891
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.00449	0.00449
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001536	0.001536
Passenger Truck	2 Carbon Monoxide (CO)	5.384439	2.123576
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.543812	0.346828
Passenger Truck	87 Volatile Organic Compounds	0.560715	0.062647
Passenger Truck	90 Atmospheric CO2	448.078247	405.977386
Passenger Truck	100 Primary Exhaust PM10 - Total	0.02581	0.013033
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.040012	0.040012
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.010751	0.010751
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.023016	0.011704

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TO_2025_100_51	TO	3	2025	49057 Weber County	51

Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.005002	0.005002
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001613	0.001613
Light Commercial Truck	2 Carbon Monoxide (CO)	5.791959	2.170826
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.564716	0.353784
Light Commercial Truck	87 Volatile Organic Compounds	0.587033	0.063484
Light Commercial Truck	90 Atmospheric CO2	444.249146	398.739288
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.028753	0.014639
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.040239	0.040239
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.01081	0.01081
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.025681	0.013185
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.00503	0.00503
Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001622	0.001622
Intercity Bus	2 Carbon Monoxide (CO)	1.246157	1.186081
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.800949	4.79844
Intercity Bus	87 Volatile Organic Compounds	0.315724	0.252911
Intercity Bus	90 Atmospheric CO2	1788.672485	1786.843262
Intercity Bus	100 Primary Exhaust PM10 - Total	0.195423	0.195359
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.204017	0.204017
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027789	0.027789
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.17979	0.179731
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.025503	0.025503
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004167	0.004167
Transit Bus	2 Carbon Monoxide (CO)	2.039165	1.78109
Transit Bus	3 Oxides of Nitrogen (NOx)	2.940404	2.939936
Transit Bus	87 Volatile Organic Compounds	0.255902	0.193556
Transit Bus	90 Atmospheric CO2	1293.956055	1289.578003
Transit Bus	100 Primary Exhaust PM10 - Total	0.06073	0.06051
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.138732	0.138732
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018704	0.018704
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.055748	0.055548
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.017341	0.017341
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002806	0.002806
School Bus	2 Carbon Monoxide (CO)	1.879448	0.975647
School Bus	3 Oxides of Nitrogen (NOx)	2.527283	2.522699
School Bus	87 Volatile Organic Compounds	0.377858	0.256818
School Bus	90 Atmospheric CO2	980.543091	963.667786
School Bus	100 Primary Exhaust PM10 - Total	0.120058	0.119299
School Bus	106 Primary PM10 - Brakewear Particulate	0.115671	0.115671
School Bus	107 Primary PM10 - Tirewear Particulate	0.016867	0.016867
School Bus	110 Primary Exhaust PM2.5 - Total	0.110397	0.109705
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.014459	0.014459
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00253	0.00253
Refuse Truck	2 Carbon Monoxide (CO)	0.986933	0.598092
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.409809	2.407761
Refuse Truck	87 Volatile Organic Compounds	0.193358	0.094945
Refuse Truck	90 Atmospheric CO2	1813.31958	1805.780029
Refuse Truck	100 Primary Exhaust PM10 - Total	0.076831	0.076475

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TO_2025_3_62	TO	3	2025	49057 Weber County	62

Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.223857	0.223857
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033873	0.033873
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.070647	0.070325
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.027982	0.027982
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005081	0.005081
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.301142	1.958562
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.382086	1.272027
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.367498	0.123323
Single Unit Short-haul Truck	90 Atmospheric CO2	1095.784668	1075.227661
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040731	0.036293
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.132292	0.132292
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016447	0.016447
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037022	0.033081
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.016536	0.016536
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002467	0.002467
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.079375	0.63414
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.31502	1.276586
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.193635	0.102176
Single Unit Long-haul Truck	90 Atmospheric CO2	1033.270874	1023.618347
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.042245	0.041385
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.159993	0.159993
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019866	0.019866
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03876	0.037989
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019999	0.019999
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.00298	0.00298
Motor Home	2 Carbon Monoxide (CO)	30.876877	18.484182
Motor Home	3 Oxides of Nitrogen (NOx)	3.931233	3.711928
Motor Home	87 Volatile Organic Compounds	1.651193	0.640733
Motor Home	90 Atmospheric CO2	1170.648071	1136.189453
Motor Home	100 Primary Exhaust PM10 - Total	0.251637	0.23489
Motor Home	106 Primary PM10 - Brakewear Particulate	0.118276	0.118276
Motor Home	107 Primary PM10 - Tirewear Particulate	0.015021	0.015021
Motor Home	110 Primary Exhaust PM2.5 - Total	0.226233	0.211397
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.014785	0.014785
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002253	0.002253
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.742428	0.542075
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.293984	2.293981
Combination Short-haul Truck	87 Volatile Organic Compounds	0.178931	0.092103
Combination Short-haul Truck	90 Atmospheric CO2	1793.046387	1788.102295
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.067009	0.066818
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.211004	0.211004
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.030108	0.030108
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.061648	0.061473
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.026375	0.026375
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004516	0.004516
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.762888	0.675676
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.99476	2.99476

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WE_2025_116_32	WE	3	2025	49057 Weber County	32

Combination Long-haul Truck	87 Volatile Organic Compounds	0.186802	0.117751
Combination Long-haul Truck	90 Atmospheric CO2	1851.903687	1849.599854
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.103104	0.103021
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.229908	0.229908
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033707	0.033707
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.094855	0.094779
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.028739	0.028739
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005056	0.005056
Motorcycle	2 Carbon Monoxide (CO)	17.30929	11.786244
Motorcycle	3 Oxides of Nitrogen (NOx)	0.850173	0.726929
Motorcycle	87 Volatile Organic Compounds	3.750812	0.597152
Motorcycle	90 Atmospheric CO2	428.112915	377.417908
Motorcycle	100 Primary Exhaust PM10 - Total	0.036212	0.030538
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.020873	0.020873
Motorcycle	107 Primary PM10 - Tirewear Particulate	0.005122	0.005122
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.032034	0.027014
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002609	0.002609
Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000768	0.000768
Passenger Car	2 Carbon Monoxide (CO)	4.683736	1.499893
Passenger Car	3 Oxides of Nitrogen (NOx)	0.251554	0.116092
Passenger Car	87 Volatile Organic Compounds	0.477905	0.017272
Passenger Car	90 Atmospheric CO2	318.645844	279.502991
Passenger Car	100 Primary Exhaust PM10 - Total	0.017504	0.006658
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.035919	0.035919
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.010241	0.010241
Passenger Car	110 Primary Exhaust PM2.5 - Total	0.015486	0.005891
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.00449	0.00449
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001536	0.001536
Passenger Truck	2 Carbon Monoxide (CO)	5.384439	2.123576
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.543812	0.346828
Passenger Truck	87 Volatile Organic Compounds	0.560715	0.062647
Passenger Truck	90 Atmospheric CO2	448.078247	405.977386
Passenger Truck	100 Primary Exhaust PM10 - Total	0.02581	0.013033
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.040012	0.040012
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.010751	0.010751
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.023016	0.011704
Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.005002	0.005002
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001613	0.001613
Light Commercial Truck	2 Carbon Monoxide (CO)	5.791959	2.170826
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.564716	0.353784
Light Commercial Truck	87 Volatile Organic Compounds	0.587033	0.063484
Light Commercial Truck	90 Atmospheric CO2	444.249146	398.739288
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.028753	0.014639
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.040239	0.040239
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.01081	0.01081
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.025681	0.013185
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.00503	0.00503

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WE_2025_106_52	WE	3	2025	49057 Weber County	52

Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001622	0.001622
Intercity Bus	2 Carbon Monoxide (CO)	1.246157	1.186081
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.800949	4.79844
Intercity Bus	87 Volatile Organic Compounds	0.315724	0.252911
Intercity Bus	90 Atmospheric CO2	1788.672485	1786.843262
Intercity Bus	100 Primary Exhaust PM10 - Total	0.195423	0.195359
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.204017	0.204017
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027789	0.027789
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.17979	0.179731
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.025503	0.025503
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004167	0.004167
Transit Bus	2 Carbon Monoxide (CO)	2.039165	1.78109
Transit Bus	3 Oxides of Nitrogen (NOx)	2.940404	2.939936
Transit Bus	87 Volatile Organic Compounds	0.255902	0.193556
Transit Bus	90 Atmospheric CO2	1293.956055	1289.578003
Transit Bus	100 Primary Exhaust PM10 - Total	0.06073	0.06051
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.138732	0.138732
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018704	0.018704
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.055748	0.055548
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.017341	0.017341
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002806	0.002806
School Bus	2 Carbon Monoxide (CO)	1.879448	0.975647
School Bus	3 Oxides of Nitrogen (NOx)	2.527283	2.522699
School Bus	87 Volatile Organic Compounds	0.377858	0.256818
School Bus	90 Atmospheric CO2	980.543091	963.667786
School Bus	100 Primary Exhaust PM10 - Total	0.120058	0.119299
School Bus	106 Primary PM10 - Brakewear Particulate	0.115671	0.115671
School Bus	107 Primary PM10 - Tirewear Particulate	0.016867	0.016867
School Bus	110 Primary Exhaust PM2.5 - Total	0.110397	0.109705
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.014459	0.014459
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00253	0.00253
Refuse Truck	2 Carbon Monoxide (CO)	0.986933	0.598092
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.409809	2.407761
Refuse Truck	87 Volatile Organic Compounds	0.193358	0.094945
Refuse Truck	90 Atmospheric CO2	1813.31958	1805.780029
Refuse Truck	100 Primary Exhaust PM10 - Total	0.076831	0.076475
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.223857	0.223857
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033873	0.033873
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.070647	0.070325
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.027982	0.027982
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005081	0.005081
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.301142	1.958562
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.382086	1.272027
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.367498	0.123323
Single Unit Short-haul Truck	90 Atmospheric CO2	1095.784668	1075.227661
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040731	0.036293
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.132292	0.132292

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WE_2025_3_53	WE	3	2025	49057 Weber County	53
WE_2025_87_53	WE	3	2025	49057 Weber County	53
WE_2025_90_53	WE	3	2025	49057 Weber County	53
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WE_2025_3_62	WE	3	2025	49057 Weber County	62
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WE_2025_110_62	WE	3	2025	49057 Weber County	62
WE_2025_116_62	WE	3	2025	49057 Weber County	62
WE_2025_117_62	WE	3	2025	49057 Weber County	62

Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016447	0.016447
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037022	0.033081
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.016536	0.016536
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002467	0.002467
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.079375	0.63414
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.31502	1.276586
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.193635	0.102176
Single Unit Long-haul Truck	90 Atmospheric CO2	1033.270874	1023.618347
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.042245	0.041385
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.159993	0.159993
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019866	0.019866
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03876	0.037989
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019999	0.019999
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.00298	0.00298
Motor Home	2 Carbon Monoxide (CO)	30.876877	18.484182
Motor Home	3 Oxides of Nitrogen (NOx)	3.931233	3.711928
Motor Home	87 Volatile Organic Compounds	1.651193	0.640733
Motor Home	90 Atmospheric CO2	1170.648071	1136.189453
Motor Home	100 Primary Exhaust PM10 - Total	0.251637	0.23489
Motor Home	106 Primary PM10 - Brakewear Particulate	0.118276	0.118276
Motor Home	107 Primary PM10 - Tirewear Particulate	0.015021	0.015021
Motor Home	110 Primary Exhaust PM2.5 - Total	0.226233	0.211397
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.014785	0.014785
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002253	0.002253
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.742428	0.542075
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.293984	2.293981
Combination Short-haul Truck	87 Volatile Organic Compounds	0.178931	0.092103
Combination Short-haul Truck	90 Atmospheric CO2	1793.046387	1788.102295
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.067009	0.066818
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.211004	0.211004
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.030108	0.030108
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.061648	0.061473
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.026375	0.026375
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004516	0.004516
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.762888	0.675676
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.99476	2.99476
Combination Long-haul Truck	87 Volatile Organic Compounds	0.186802	0.117751
Combination Long-haul Truck	90 Atmospheric CO2	1851.903687	1849.599854
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.103104	0.103021
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.229908	0.229908
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033707	0.033707
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.094855	0.094779
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.028739	0.028739
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005056	0.005056

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DA_2025_90_41	DA	2	2025	49011	Davis County	41
DA_2025_100_41	DA	2	2025	49011	Davis County	41

sourceTypeName	pollutantID	pollutantName	ALL_gpm	Run_gpm
Motorcycle	2	Carbon Monoxide (CO)	16.925747	12.060104
Motorcycle	3	Oxides of Nitrogen (NOx)	0.890275	0.781404
Motorcycle	87	Volatile Organic Compounds	3.273868	0.569847
Motorcycle	90	Atmospheric CO2	428.816254	384.152954
Motorcycle	100	Primary Exhaust PM10 - Total	0.037072	0.032075
Motorcycle	106	Primary PM10 - Brakewear Particulate	0.017567	0.017567
Motorcycle	107	Primary PM10 - Tirewear Particulate	0.004829	0.004829
Motorcycle	110	Primary Exhaust PM2.5 - Total	0.032794	0.028374
Motorcycle	116	Primary PM2.5 - Brakewear Particulate	0.002196	0.002196
Motorcycle	117	Primary PM2.5 - Tirewear Particulate	0.000724	0.000724
Passenger Car	2	Carbon Monoxide (CO)	4.095838	1.418569
Passenger Car	3	Oxides of Nitrogen (NOx)	0.213126	0.101602
Passenger Car	87	Volatile Organic Compounds	0.394645	0.014571
Passenger Car	90	Atmospheric CO2	303.906921	270.0383
Passenger Car	100	Primary Exhaust PM10 - Total	0.014507	0.005829
Passenger Car	106	Primary PM10 - Brakewear Particulate	0.030397	0.030397
Passenger Car	107	Primary PM10 - Tirewear Particulate	0.009657	0.009657
Passenger Car	110	Primary Exhaust PM2.5 - Total	0.012834	0.005158
Passenger Car	116	Primary PM2.5 - Brakewear Particulate	0.0038	0.0038
Passenger Car	117	Primary PM2.5 - Tirewear Particulate	0.001449	0.001449
Passenger Truck	2	Carbon Monoxide (CO)	4.642765	1.946034
Passenger Truck	3	Oxides of Nitrogen (NOx)	0.422671	0.272049
Passenger Truck	87	Volatile Organic Compounds	0.444492	0.044042
Passenger Truck	90	Atmospheric CO2	413.140198	376.31015
Passenger Truck	100	Primary Exhaust PM10 - Total	0.021466	0.010786
Passenger Truck	106	Primary PM10 - Brakewear Particulate	0.033732	0.033732
Passenger Truck	107	Primary PM10 - Tirewear Particulate	0.009986	0.009986
Passenger Truck	110	Primary Exhaust PM2.5 - Total	0.019091	0.009639
Passenger Truck	116	Primary PM2.5 - Brakewear Particulate	0.004217	0.004217
Passenger Truck	117	Primary PM2.5 - Tirewear Particulate	0.001498	0.001498
Light Commercial Truck	2	Carbon Monoxide (CO)	5.016356	1.988654
Light Commercial Truck	3	Oxides of Nitrogen (NOx)	0.444662	0.279812
Light Commercial Truck	87	Volatile Organic Compounds	0.472046	0.045048
Light Commercial Truck	90	Atmospheric CO2	411.448578	371.582001
Light Commercial Truck	100	Primary Exhaust PM10 - Total	0.022849	0.01105
Light Commercial Truck	106	Primary PM10 - Brakewear Particulate	0.03398	0.03398
Light Commercial Truck	107	Primary PM10 - Tirewear Particulate	0.010074	0.010074
Light Commercial Truck	110	Primary Exhaust PM2.5 - Total	0.020335	0.009892
Light Commercial Truck	116	Primary PM2.5 - Brakewear Particulate	0.004248	0.004248
Light Commercial Truck	117	Primary PM2.5 - Tirewear Particulate	0.001511	0.001511
Intercity Bus	2	Carbon Monoxide (CO)	1.205734	1.151113
Intercity Bus	3	Oxides of Nitrogen (NOx)	4.630745	4.628464
Intercity Bus	87	Volatile Organic Compounds	0.302381	0.24243
Intercity Bus	90	Atmospheric CO2	1718.959351	1717.30188
Intercity Bus	100	Primary Exhaust PM10 - Total	0.184793	0.184733

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Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.178395	0.178395
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027362	0.027362
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.170008	0.169954
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.0223	0.0223
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004104	0.004104
Transit Bus	2 Carbon Monoxide (CO)	2.024324	1.78972
Transit Bus	3 Oxides of Nitrogen (NOx)	2.885211	2.884784
Transit Bus	87 Volatile Organic Compounds	0.250086	0.189904
Transit Bus	90 Atmospheric CO2	1283.328003	1279.363037
Transit Bus	100 Primary Exhaust PM10 - Total	0.058298	0.058099
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.123839	0.123839
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018415	0.018415
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.053513	0.053332
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.01548	0.01548
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002762	0.002762
School Bus	2 Carbon Monoxide (CO)	1.805128	0.983412
School Bus	3 Oxides of Nitrogen (NOx)	2.427221	2.423051
School Bus	87 Volatile Organic Compounds	0.367528	0.255538
School Bus	90 Atmospheric CO2	938.491943	923.181396
School Bus	100 Primary Exhaust PM10 - Total	0.118375	0.117685
School Bus	106 Primary PM10 - Brakewear Particulate	0.107124	0.107124
School Bus	107 Primary PM10 - Tirewear Particulate	0.016608	0.016608
School Bus	110 Primary Exhaust PM2.5 - Total	0.108857	0.108228
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.01339	0.01339
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.002491	0.002491
Refuse Truck	2 Carbon Monoxide (CO)	1.024209	0.583142
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.30745	2.305126
Refuse Truck	87 Volatile Organic Compounds	0.19225	0.090567
Refuse Truck	90 Atmospheric CO2	1736.93811	1728.398193
Refuse Truck	100 Primary Exhaust PM10 - Total	0.072498	0.072095
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.194971	0.194971
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033353	0.033353
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.066664	0.066299
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.024371	0.024371
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005003	0.005003
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.805519	1.882992
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.33899	1.214088
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.37763	0.115299
Single Unit Short-haul Truck	90 Atmospheric CO2	1034.194336	1010.990662
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.039431	0.03443
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.118526	0.118526
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016195	0.016195
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03584	0.031399
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.014816	0.014816
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002429	0.002429
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.117266	0.612703
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.246237	1.202642

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Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.196082	0.097709
Single Unit Long-haul Truck	90 Atmospheric CO2	967.484375	956.579834
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.040656	0.039691
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.142687	0.142687
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019562	0.019562
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037307	0.036441
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.017836	0.017836
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002935	0.002935
Motor Home	2 Carbon Monoxide (CO)	28.626043	14.888786
Motor Home	3 Oxides of Nitrogen (NOx)	3.559851	3.322405
Motor Home	87 Volatile Organic Compounds	1.574126	0.551761
Motor Home	90 Atmospheric CO2	1102.666626	1063.638672
Motor Home	100 Primary Exhaust PM10 - Total	0.213665	0.19619
Motor Home	106 Primary PM10 - Brakewear Particulate	0.10657	0.10657
Motor Home	107 Primary PM10 - Tirewear Particulate	0.014791	0.014791
Motor Home	110 Primary Exhaust PM2.5 - Total	0.192205	0.176725
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.013321	0.013321
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002219	0.002219
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.760545	0.529404
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.1989	2.198896
Combination Short-haul Truck	87 Volatile Organic Compounds	0.177745	0.087922
Combination Short-haul Truck	90 Atmospheric CO2	1717.171997	1711.484497
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.0633	0.063081
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.183568	0.183568
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.029647	0.029647
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.058236	0.058034
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.022946	0.022946
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004447	0.004447
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.759144	0.658532
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.874756	2.874756
Combination Long-haul Truck	87 Volatile Organic Compounds	0.181034	0.112544
Combination Long-haul Truck	90 Atmospheric CO2	1775.423218	1772.776123
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.096963	0.096867
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.199463	0.199463
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033191	0.033191
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.089206	0.089117
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.024933	0.024933
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004979	0.004979
Motorcycle	2 Carbon Monoxide (CO)	17.30929	11.786244
Motorcycle	3 Oxides of Nitrogen (NOx)	0.850173	0.726929
Motorcycle	87 Volatile Organic Compounds	3.750812	0.597152
Motorcycle	90 Atmospheric CO2	428.112915	377.417908
Motorcycle	100 Primary Exhaust PM10 - Total	0.036212	0.030538
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.020873	0.020873
Motorcycle	107 Primary PM10 - Tirewear Particulate	0.005122	0.005122
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.032034	0.027014
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002609	0.002609

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Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000768	0.000768
Passenger Car	2 Carbon Monoxide (CO)	4.683736	1.499893
Passenger Car	3 Oxides of Nitrogen (NOx)	0.251554	0.116092
Passenger Car	87 Volatile Organic Compounds	0.477905	0.017272
Passenger Car	90 Atmospheric CO2	318.645844	279.502991
Passenger Car	100 Primary Exhaust PM10 - Total	0.017504	0.006658
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.035919	0.035919
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.010241	0.010241
Passenger Car	110 Primary Exhaust PM2.5 - Total	0.015486	0.005891
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.00449	0.00449
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001536	0.001536
Passenger Truck	2 Carbon Monoxide (CO)	5.384439	2.123576
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.543812	0.346828
Passenger Truck	87 Volatile Organic Compounds	0.560715	0.062647
Passenger Truck	90 Atmospheric CO2	448.078247	405.977386
Passenger Truck	100 Primary Exhaust PM10 - Total	0.02581	0.013033
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.040012	0.040012
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.010751	0.010751
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.023016	0.011704
Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.005002	0.005002
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001613	0.001613
Light Commercial Truck	2 Carbon Monoxide (CO)	5.791959	2.170826
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.564716	0.353784
Light Commercial Truck	87 Volatile Organic Compounds	0.587033	0.063484
Light Commercial Truck	90 Atmospheric CO2	444.249146	398.739288
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.028753	0.014639
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.040239	0.040239
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.01081	0.01081
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.025681	0.013185
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.00503	0.00503
Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001622	0.001622
Intercity Bus	2 Carbon Monoxide (CO)	1.246157	1.186081
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.800949	4.79844
Intercity Bus	87 Volatile Organic Compounds	0.315724	0.252911
Intercity Bus	90 Atmospheric CO2	1788.672485	1786.843262
Intercity Bus	100 Primary Exhaust PM10 - Total	0.195423	0.195359
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.204017	0.204017
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.027789	0.027789
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.17979	0.179731
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.025503	0.025503
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004167	0.004167
Transit Bus	2 Carbon Monoxide (CO)	2.039165	1.78109
Transit Bus	3 Oxides of Nitrogen (NOx)	2.940404	2.939936
Transit Bus	87 Volatile Organic Compounds	0.255902	0.193556
Transit Bus	90 Atmospheric CO2	1293.956055	1289.578003
Transit Bus	100 Primary Exhaust PM10 - Total	0.06073	0.06051
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.138732	0.138732

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WE_2025_3_52	WE	3	2025	49057 Weber County	52
WE_2025_87_52	WE	3	2025	49057 Weber County	52
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WE_2025_100_52	WE	3	2025	49057 Weber County	52
WE_2025_106_52	WE	3	2025	49057 Weber County	52
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WE_2025_116_52	WE	3	2025	49057 Weber County	52
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WE_2025_3_54	WE	3	2025	49057 Weber County	54
WE_2025_87_54	WE	3	2025	49057 Weber County	54

Transit Bus	107 Primary PM10 - Tirewear Particulate	0.018704	0.018704
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.055748	0.055548
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.017341	0.017341
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.002806	0.002806
School Bus	2 Carbon Monoxide (CO)	1.879448	0.975647
School Bus	3 Oxides of Nitrogen (NOx)	2.527283	2.522699
School Bus	87 Volatile Organic Compounds	0.377858	0.256818
School Bus	90 Atmospheric CO2	980.543091	963.667786
School Bus	100 Primary Exhaust PM10 - Total	0.120058	0.119299
School Bus	106 Primary PM10 - Brakewear Particulate	0.115671	0.115671
School Bus	107 Primary PM10 - Tirewear Particulate	0.016867	0.016867
School Bus	110 Primary Exhaust PM2.5 - Total	0.110397	0.109705
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.014459	0.014459
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00253	0.00253
Refuse Truck	2 Carbon Monoxide (CO)	0.986933	0.598092
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.409809	2.407761
Refuse Truck	87 Volatile Organic Compounds	0.193358	0.094945
Refuse Truck	90 Atmospheric CO2	1813.31958	1805.780029
Refuse Truck	100 Primary Exhaust PM10 - Total	0.076831	0.076475
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.223857	0.223857
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.033873	0.033873
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.070647	0.070325
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.027982	0.027982
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005081	0.005081
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.301142	1.958562
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.382086	1.272027
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.367498	0.123323
Single Unit Short-haul Truck	90 Atmospheric CO2	1095.784668	1075.227661
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040731	0.036293
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.132292	0.132292
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.016447	0.016447
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037022	0.033081
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.016536	0.016536
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002467	0.002467
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.079375	0.63414
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.31502	1.276586
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.193635	0.102176
Single Unit Long-haul Truck	90 Atmospheric CO2	1033.270874	1023.618347
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.042245	0.041385
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.159993	0.159993
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.019866	0.019866
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.03876	0.037989
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019999	0.019999
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.00298	0.00298
Motor Home	2 Carbon Monoxide (CO)	30.876877	18.484182
Motor Home	3 Oxides of Nitrogen (NOx)	3.931233	3.711928
Motor Home	87 Volatile Organic Compounds	1.651193	0.640733

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WE_2025_117_54	WE	3	2025	49057 Weber County	54
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SL_2025_117_11	SL	8	2025	49035 Salt Lake County	11
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SL_2025_117_21	SL	8	2025	49035 Salt Lake County	21

Motor Home	90 Atmospheric CO2	1170.648071	1136.189453
Motor Home	100 Primary Exhaust PM10 - Total	0.251637	0.23489
Motor Home	106 Primary PM10 - Brakewear Particulate	0.118276	0.118276
Motor Home	107 Primary PM10 - Tirewear Particulate	0.015021	0.015021
Motor Home	110 Primary Exhaust PM2.5 - Total	0.226233	0.211397
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.014785	0.014785
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002253	0.002253
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.742428	0.542075
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.293984	2.293981
Combination Short-haul Truck	87 Volatile Organic Compounds	0.178931	0.092103
Combination Short-haul Truck	90 Atmospheric CO2	1793.046387	1788.102295
Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.067009	0.066818
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.211004	0.211004
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.030108	0.030108
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.061648	0.061473
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.026375	0.026375
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004516	0.004516
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.762888	0.675676
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	2.99476	2.99476
Combination Long-haul Truck	87 Volatile Organic Compounds	0.186802	0.117751
Combination Long-haul Truck	90 Atmospheric CO2	1851.903687	1849.599854
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.103104	0.103021
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.229908	0.229908
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.033707	0.033707
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.094855	0.094779
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.028739	0.028739
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005056	0.005056
Motorcycle	2 Carbon Monoxide (CO)	15.633373	11.813879
Motorcycle	3 Oxides of Nitrogen (NOx)	0.832056	0.745596
Motorcycle	87 Volatile Organic Compounds	2.731982	0.58355
Motorcycle	90 Atmospheric CO2	415.108704	379.547485
Motorcycle	100 Primary Exhaust PM10 - Total	0.034917	0.030973
Motorcycle	106 Primary PM10 - Brakewear Particulate	0.019964	0.019964
Motorcycle	107 Primary PM10 - Tirewear Particulate	0.005055	0.005055
Motorcycle	110 Primary Exhaust PM2.5 - Total	0.030888	0.027399
Motorcycle	116 Primary PM2.5 - Brakewear Particulate	0.002495	0.002495
Motorcycle	117 Primary PM2.5 - Tirewear Particulate	0.000758	0.000758
Passenger Car	2 Carbon Monoxide (CO)	3.892397	1.398485
Passenger Car	3 Oxides of Nitrogen (NOx)	0.2005	0.096694
Passenger Car	87 Volatile Organic Compounds	0.360201	0.014157
Passenger Car	90 Atmospheric CO2	306.553406	274.53537
Passenger Car	100 Primary Exhaust PM10 - Total	0.013589	0.005649
Passenger Car	106 Primary PM10 - Brakewear Particulate	0.034453	0.034453
Passenger Car	107 Primary PM10 - Tirewear Particulate	0.010108	0.010108
Passenger Car	110 Primary Exhaust PM2.5 - Total	0.012022	0.004998
Passenger Car	116 Primary PM2.5 - Brakewear Particulate	0.004307	0.004307
Passenger Car	117 Primary PM2.5 - Tirewear Particulate	0.001516	0.001516

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SL_2025_100_43	SL	8	2025	49035 Salt Lake County	43
SL_2025_106_43	SL	8	2025	49035 Salt Lake County	43
SL_2025_107_43	SL	8	2025	49035 Salt Lake County	43

Passenger Truck	2 Carbon Monoxide (CO)	3.813609	1.707959
Passenger Truck	3 Oxides of Nitrogen (NOx)	0.32946	0.215117
Passenger Truck	87 Volatile Organic Compounds	0.322551	0.030366
Passenger Truck	90 Atmospheric CO2	412.354828	378.601196
Passenger Truck	100 Primary Exhaust PM10 - Total	0.016215	0.008165
Passenger Truck	106 Primary PM10 - Brakewear Particulate	0.038274	0.038274
Passenger Truck	107 Primary PM10 - Tirewear Particulate	0.01046	0.01046
Passenger Truck	110 Primary Exhaust PM2.5 - Total	0.014426	0.007302
Passenger Truck	116 Primary PM2.5 - Brakewear Particulate	0.004784	0.004784
Passenger Truck	117 Primary PM2.5 - Tirewear Particulate	0.001569	0.001569
Light Commercial Truck	2 Carbon Monoxide (CO)	4.129526	1.770604
Light Commercial Truck	3 Oxides of Nitrogen (NOx)	0.345027	0.220018
Light Commercial Truck	87 Volatile Organic Compounds	0.344888	0.031085
Light Commercial Truck	90 Atmospheric CO2	410.825928	374.288513
Light Commercial Truck	100 Primary Exhaust PM10 - Total	0.01712	0.008222
Light Commercial Truck	106 Primary PM10 - Brakewear Particulate	0.038528	0.038528
Light Commercial Truck	107 Primary PM10 - Tirewear Particulate	0.010546	0.010546
Light Commercial Truck	110 Primary Exhaust PM2.5 - Total	0.015234	0.007359
Light Commercial Truck	116 Primary PM2.5 - Brakewear Particulate	0.004816	0.004816
Light Commercial Truck	117 Primary PM2.5 - Tirewear Particulate	0.001582	0.001582
Intercity Bus	2 Carbon Monoxide (CO)	1.339708	1.277856
Intercity Bus	3 Oxides of Nitrogen (NOx)	4.893861	4.891277
Intercity Bus	87 Volatile Organic Compounds	0.285299	0.27748
Intercity Bus	90 Atmospheric CO2	1812.040771	1810.16394
Intercity Bus	100 Primary Exhaust PM10 - Total	0.211034	0.210968
Intercity Bus	106 Primary PM10 - Brakewear Particulate	0.243148	0.243148
Intercity Bus	107 Primary PM10 - Tirewear Particulate	0.030206	0.030206
Intercity Bus	110 Primary Exhaust PM2.5 - Total	0.19415	0.19409
Intercity Bus	116 Primary PM2.5 - Brakewear Particulate	0.030393	0.030393
Intercity Bus	117 Primary PM2.5 - Tirewear Particulate	0.004531	0.004531
Transit Bus	2 Carbon Monoxide (CO)	2.056778	1.791116
Transit Bus	3 Oxides of Nitrogen (NOx)	2.869434	2.868951
Transit Bus	87 Volatile Organic Compounds	0.227984	0.207814
Transit Bus	90 Atmospheric CO2	1240.000732	1235.510864
Transit Bus	100 Primary Exhaust PM10 - Total	0.061261	0.061035
Transit Bus	106 Primary PM10 - Brakewear Particulate	0.164125	0.164125
Transit Bus	107 Primary PM10 - Tirewear Particulate	0.02033	0.02033
Transit Bus	110 Primary Exhaust PM2.5 - Total	0.056255	0.05605
Transit Bus	116 Primary PM2.5 - Brakewear Particulate	0.020516	0.020516
Transit Bus	117 Primary PM2.5 - Tirewear Particulate	0.00305	0.00305
School Bus	2 Carbon Monoxide (CO)	1.929719	0.999214
School Bus	3 Oxides of Nitrogen (NOx)	2.44757	2.442848
School Bus	87 Volatile Organic Compounds	0.370221	0.279768
School Bus	90 Atmospheric CO2	937.30835	919.970886
School Bus	100 Primary Exhaust PM10 - Total	0.127548	0.126767
School Bus	106 Primary PM10 - Brakewear Particulate	0.135391	0.135391
School Bus	107 Primary PM10 - Tirewear Particulate	0.018334	0.018334

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SL_2025_110_43	SL	8	2025	49035 Salt Lake County	43
SL_2025_116_43	SL	8	2025	49035 Salt Lake County	43
SL_2025_117_43	SL	8	2025	49035 Salt Lake County	43
SL_2025_2_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_3_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_87_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_90_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_100_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_106_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_107_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_110_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_116_51	SL	8	2025	49035 Salt Lake County	51
SL_2025_117_51	SL	8	2025	49035 Salt Lake County	51
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SL_2025_3_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_87_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_90_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_100_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_106_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_107_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_110_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_116_52	SL	8	2025	49035 Salt Lake County	52
SL_2025_117_52	SL	8	2025	49035 Salt Lake County	52
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SL_2025_3_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_87_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_90_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_100_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_106_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_107_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_110_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_116_53	SL	8	2025	49035 Salt Lake County	53
SL_2025_117_53	SL	8	2025	49035 Salt Lake County	53
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SL_2025_3_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_87_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_90_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_100_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_106_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_107_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_110_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_116_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_117_54	SL	8	2025	49035 Salt Lake County	54
SL_2025_2_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_3_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_87_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_90_61	SL	8	2025	49035 Salt Lake County	61

School Bus	110 Primary Exhaust PM2.5 - Total	0.117304	0.116592
School Bus	116 Primary PM2.5 - Brakewear Particulate	0.016924	0.016924
School Bus	117 Primary PM2.5 - Tirewear Particulate	0.00275	0.00275
Refuse Truck	2 Carbon Monoxide (CO)	1.088327	0.646227
Refuse Truck	3 Oxides of Nitrogen (NOx)	2.481064	2.478735
Refuse Truck	87 Volatile Organic Compounds	0.152596	0.104814
Refuse Truck	90 Atmospheric CO2	1835.934082	1827.374268
Refuse Truck	100 Primary Exhaust PM10 - Total	0.082566	0.082163
Refuse Truck	106 Primary PM10 - Brakewear Particulate	0.265182	0.265182
Refuse Truck	107 Primary PM10 - Tirewear Particulate	0.036813	0.036813
Refuse Truck	110 Primary Exhaust PM2.5 - Total	0.075927	0.075561
Refuse Truck	116 Primary PM2.5 - Brakewear Particulate	0.033148	0.033148
Refuse Truck	117 Primary PM2.5 - Tirewear Particulate	0.005522	0.005522
Single Unit Short-haul Truck	2 Carbon Monoxide (CO)	6.989503	2.055447
Single Unit Short-haul Truck	3 Oxides of Nitrogen (NOx)	1.429373	1.304179
Single Unit Short-haul Truck	87 Volatile Organic Compounds	0.334061	0.136822
Single Unit Short-haul Truck	90 Atmospheric CO2	1118.869019	1095.611206
Single Unit Short-haul Truck	100 Primary Exhaust PM10 - Total	0.040888	0.035876
Single Unit Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.155163	0.155163
Single Unit Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.017875	0.017875
Single Unit Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.037235	0.032784
Single Unit Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.019395	0.019395
Single Unit Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.002681	0.002681
Single Unit Long-haul Truck	2 Carbon Monoxide (CO)	1.173996	0.668252
Single Unit Long-haul Truck	3 Oxides of Nitrogen (NOx)	1.371583	1.327886
Single Unit Long-haul Truck	87 Volatile Organic Compounds	0.1866	0.112765
Single Unit Long-haul Truck	90 Atmospheric CO2	1056.62146	1045.691406
Single Unit Long-haul Truck	100 Primary Exhaust PM10 - Total	0.044213	0.043245
Single Unit Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.187482	0.187482
Single Unit Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.021591	0.021591
Single Unit Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.040596	0.039729
Single Unit Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.023435	0.023435
Single Unit Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.003239	0.003239
Motor Home	2 Carbon Monoxide (CO)	29.692186	15.942488
Motor Home	3 Oxides of Nitrogen (NOx)	3.671525	3.437416
Motor Home	87 Volatile Organic Compounds	1.444949	0.635881
Motor Home	90 Atmospheric CO2	1166.42395	1127.325684
Motor Home	100 Primary Exhaust PM10 - Total	0.200982	0.183303
Motor Home	106 Primary PM10 - Brakewear Particulate	0.139053	0.139053
Motor Home	107 Primary PM10 - Tirewear Particulate	0.016326	0.016326
Motor Home	110 Primary Exhaust PM2.5 - Total	0.181407	0.165747
Motor Home	116 Primary PM2.5 - Brakewear Particulate	0.017382	0.017382
Motor Home	117 Primary PM2.5 - Tirewear Particulate	0.002449	0.002449
Combination Short-haul Truck	2 Carbon Monoxide (CO)	0.818672	0.586518
Combination Short-haul Truck	3 Oxides of Nitrogen (NOx)	2.355409	2.355405
Combination Short-haul Truck	87 Volatile Organic Compounds	0.140845	0.101694
Combination Short-haul Truck	90 Atmospheric CO2	1815.68396	1809.971436

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SL_2025_100_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_106_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_107_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_110_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_116_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_117_61	SL	8	2025	49035 Salt Lake County	61
SL_2025_2_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_3_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_87_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_90_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_100_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_106_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_107_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_110_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_116_62	SL	8	2025	49035 Salt Lake County	62
SL_2025_117_62	SL	8	2025	49035 Salt Lake County	62

Combination Short-haul Truck	100 Primary Exhaust PM10 - Total	0.072155	0.071935
Combination Short-haul Truck	106 Primary PM10 - Brakewear Particulate	0.24944	0.24944
Combination Short-haul Truck	107 Primary PM10 - Tirewear Particulate	0.032723	0.032723
Combination Short-haul Truck	110 Primary Exhaust PM2.5 - Total	0.066382	0.06618
Combination Short-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.03118	0.03118
Combination Short-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.004908	0.004908
Combination Long-haul Truck	2 Carbon Monoxide (CO)	0.830349	0.729295
Combination Long-haul Truck	3 Oxides of Nitrogen (NOx)	3.080512	3.080512
Combination Long-haul Truck	87 Volatile Organic Compounds	0.143115	0.129354
Combination Long-haul Truck	90 Atmospheric CO2	1881.586426	1878.92749
Combination Long-haul Truck	100 Primary Exhaust PM10 - Total	0.111085	0.110988
Combination Long-haul Truck	106 Primary PM10 - Brakewear Particulate	0.271719	0.271719
Combination Long-haul Truck	107 Primary PM10 - Tirewear Particulate	0.036635	0.036635
Combination Long-haul Truck	110 Primary Exhaust PM2.5 - Total	0.102198	0.102109
Combination Long-haul Truck	116 Primary PM2.5 - Brakewear Particulate	0.033965	0.033965
Combination Long-haul Truck	117 Primary PM2.5 - Tirewear Particulate	0.005495	0.005495

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IDLE Rates: Calculated using a "Projects" run for 1 hour with one vehicle of each type (13 types) on 13 separate assumed roadway type is an urban arterial, or "urban unrestricted access". The 2024 VMT mix was used to aggregate rates on arterials are assumed to represent idle rates for all road types and all counties in the Wasatch Front are easily manageable. After completing the run, from the MOVES GUI under "Post Processing" select the "Run IV Use these Salt Lake idle rates for all counties.

Index	Vehicle	MOVESRunID	iterationID	yearID	monthID
SL_2025_art_2_ALL					
SL_2025_art_3_ALL					
SL_2025_art_87_ALL					
SL_2025_art_100_ALL					
SL_2025_art_106_ALL					
SL_2025_art_107_ALL					
SL_2025_art_110_ALL					
SL_2025_art_116_ALL					
SL_2025_art_117_ALL					
SL_2024_art_122_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_122_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_122_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_122_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_122_54	Motor Home	1	1	2025	1
SL_2024_art_122_54	Motor Home	1	1	2025	1
SL_2024_art_122_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_122_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_122_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_122_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_122_51	Refuse Truck	1	1	2025	1
SL_2024_art_122_51	Refuse Truck	1	1	2025	1
SL_2024_art_122_43	School Bus	1	1	2025	1
SL_2024_art_122_43	School Bus	1	1	2025	1
SL_2024_art_122_42	Transit Bus	1	1	2025	1
SL_2024_art_122_42	Transit Bus	1	1	2025	1
SL_2024_art_122_41	Intercity Bus	1	1	2025	1
SL_2024_art_122_41	Intercity Bus	1	1	2025	1
SL_2024_art_122_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_122_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_122_31	Passenger Truck	1	1	2025	1
SL_2024_art_122_31	Passenger Truck	1	1	2025	1
SL_2024_art_122_21	Passenger Car	1	1	2025	1
SL_2024_art_122_21	Passenger Car	1	1	2025	1
SL_2024_art_122_11	Motorcycle	1	1	2025	1
SL_2024_art_122_11	Motorcycle	1	1	2025	1
SL_2024_art_121_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_121_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_121_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_121_61	Combination Short Haul Truck	1	1	2025	1

roadway links assigned the same ID as the vehicle type. The
 egate the results for a composite of all vehicles. The Salt Lake idle
 a. The "Projects" run takes about 5 minutes and the data output
 MySQL Script on Output Database" option. Then run the script #1 -

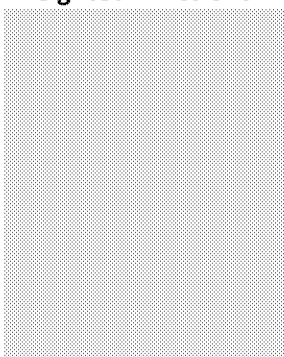
dayID	dayName	hourID	stateID	stateABBR	countyID	countyName	zoneID	linkID
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	62
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	62
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	61
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	61
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	54
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	54
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	53
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	53
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	52
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	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	42
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	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	41
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	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	21
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	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	62
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	61
	5 Weekdays	8	49	UT	49035	Salt Lake County	490350	61

pollutantID	pollutantName	processID	processName
2			
3			
87			
100			
106			
107			
110			
116			
117			
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
122	Non-carbon Organic Matter (NCOM)	15	Crankcase Running Exhaust
122	Non-carbon Organic Matter (NCOM)	1	Running Exhaust
121	CMAQ5.0 Unspeciated (PMOTHR)	15	Crankcase Running Exhaust
121	CMAQ5.0 Unspeciated (PMOTHR)	1	Running Exhaust
121	CMAQ5.0 Unspeciated (PMOTHR)	15	Crankcase Running Exhaust
121	CMAQ5.0 Unspeciated (PMOTHR)	1	Running Exhaust

ED_005329A_00001711-00207

ED 005329A 00001711-00208

sectorDesc	hpId	emissionQuant	emissionQuantMean	emissionQuantSigma	VMT Mix
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		2.657876852			
		1.132721912			
		0.223097397			
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		0.000000000			
		0.203524641			
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Weighted Emissions

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 6.49211E-05
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 0.000120235
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 5.1753E-05
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 5.17734E-05
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 5.97966E-05
 0.002036758
 2.97483E-05
 0.003690352
 0
 4.73415E-05
 0.001310871
 0.001382329
 0.000467546
 0.000493099

62 Combination Long Haul Truck
 61 Combination Short Haul Truck
 54 Motor Home
 53 Single Long Haul Truck
 52 Single Short Haul Truck
 51 Refuse Truck
 43 School Bus
 42 Transit Bus
 41 Intercity Bus
 32 Light Commercial Truck
 31 Passenger Truck
 21 Passenger Car
 11 Motorcycle

VMT Mix

Salt Lake_2024	Salt Lake_2025
Salt Lake	Salt Lake
2024	2025
0.03093	0.03094
0.01128	0.01133
0.00101	0.00100
0.00164	0.00164
0.02807	0.02802
0.00117	0.00117
0.00278	0.00278
0.00102	0.00102
0.00050	0.00050
0.08710	0.08698
0.34324	0.34274
0.48911	0.48973
0.00215	0.00215

Salt Lake_2026	Salt Lake_2027	Salt Lake_2028	Salt Lake_2029	Salt Lake_2030
Salt Lake	Salt Lake	Salt Lake	Salt Lake	Salt Lake
2026	2027	2028	2029	2030
0.03098	0.03103	0.03110	0.03117	0.03126
0.01136	0.01137	0.01136	0.01134	0.01132
0.00099	0.00099	0.00098	0.00097	0.00097
0.00163	0.00163	0.00162	0.00162	0.00161
0.02796	0.02791	0.02787	0.02782	0.02777
0.00116	0.00116	0.00116	0.00116	0.00116
0.00278	0.00278	0.00278	0.00278	0.00277
0.00102	0.00103	0.00103	0.00103	0.00104
0.00050	0.00050	0.00050	0.00050	0.00050
0.08689	0.08680	0.08672	0.08666	0.08661
0.34238	0.34197	0.34161	0.34126	0.34097
0.49018	0.49068	0.49113	0.49153	0.49188
0.00215	0.00215	0.00215	0.00215	0.00215

SL_2024_art_121_54	Motor Home	1	1	2025	1
SL_2024_art_121_54	Motor Home	1	1	2025	1
SL_2024_art_121_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_121_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_121_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_121_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_121_51	Refuse Truck	1	1	2025	1
SL_2024_art_121_51	Refuse Truck	1	1	2025	1
SL_2024_art_121_43	School Bus	1	1	2025	1
SL_2024_art_121_43	School Bus	1	1	2025	1
SL_2024_art_121_42	Transit Bus	1	1	2025	1
SL_2024_art_121_42	Transit Bus	1	1	2025	1
SL_2024_art_121_41	Intercity Bus	1	1	2025	1
SL_2024_art_121_41	Intercity Bus	1	1	2025	1
SL_2024_art_121_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_121_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_121_31	Passenger Truck	1	1	2025	1
SL_2024_art_121_31	Passenger Truck	1	1	2025	1
SL_2024_art_121_21	Passenger Car	1	1	2025	1
SL_2024_art_121_21	Passenger Car	1	1	2025	1
SL_2024_art_121_11	Motorcycle	1	1	2025	1
SL_2024_art_121_11	Motorcycle	1	1	2025	1
SL_2024_art_119_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_119_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_119_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_119_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_119_54	Motor Home	1	1	2025	1
SL_2024_art_119_54	Motor Home	1	1	2025	1
SL_2024_art_119_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_119_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_119_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_119_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_119_51	Refuse Truck	1	1	2025	1
SL_2024_art_119_51	Refuse Truck	1	1	2025	1
SL_2024_art_119_43	School Bus	1	1	2025	1
SL_2024_art_119_43	School Bus	1	1	2025	1
SL_2024_art_119_42	Transit Bus	1	1	2025	1
SL_2024_art_119_42	Transit Bus	1	1	2025	1
SL_2024_art_119_41	Intercity Bus	1	1	2025	1
SL_2024_art_119_41	Intercity Bus	1	1	2025	1
SL_2024_art_119_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_119_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_119_31	Passenger Truck	1	1	2025	1
SL_2024_art_119_31	Passenger Truck	1	1	2025	1
SL_2024_art_119_21	Passenger Car	1	1	2025	1
SL_2024_art_119_21	Passenger Car	1	1	2025	1

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[illegible]

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SL_2024_art_119_11	Motorcycle	1	1	2025	1
SL_2024_art_119_11	Motorcycle	1	1	2025	1
SL_2024_art_118_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_118_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_118_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_118_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_118_54	Motor Home	1	1	2025	1
SL_2024_art_118_54	Motor Home	1	1	2025	1
SL_2024_art_118_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_118_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_118_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_118_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_118_51	Refuse Truck	1	1	2025	1
SL_2024_art_118_51	Refuse Truck	1	1	2025	1
SL_2024_art_118_43	School Bus	1	1	2025	1
SL_2024_art_118_43	School Bus	1	1	2025	1
SL_2024_art_118_42	Transit Bus	1	1	2025	1
SL_2024_art_118_42	Transit Bus	1	1	2025	1
SL_2024_art_118_41	Intercity Bus	1	1	2025	1
SL_2024_art_118_41	Intercity Bus	1	1	2025	1
SL_2024_art_118_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_118_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_118_31	Passenger Truck	1	1	2025	1
SL_2024_art_118_31	Passenger Truck	1	1	2025	1
SL_2024_art_118_21	Passenger Car	1	1	2025	1
SL_2024_art_118_21	Passenger Car	1	1	2025	1
SL_2024_art_118_11	Motorcycle	1	1	2025	1
SL_2024_art_118_11	Motorcycle	1	1	2025	1
SL_2024_art_117_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_117_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_117_54	Motor Home	1	1	2025	1
SL_2024_art_117_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_117_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_117_51	Refuse Truck	1	1	2025	1
SL_2024_art_117_43	School Bus	1	1	2025	1
SL_2024_art_117_42	Transit Bus	1	1	2025	1
SL_2024_art_117_41	Intercity Bus	1	1	2025	1
SL_2024_art_117_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_117_31	Passenger Truck	1	1	2025	1
SL_2024_art_117_21	Passenger Car	1	1	2025	1
SL_2024_art_117_11	Motorcycle	1	1	2025	1
SL_2024_art_116_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_116_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_116_54	Motor Home	1	1	2025	1
SL_2024_art_116_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_116_52	Single Short Haul Truck	1	1	2025	1

[illegible]

119 H2O (aerosol)	15 Crankcase Running Exhaust
119 H2O (aerosol)	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
118 Composite - NonECPM	15 Crankcase Running Exhaust
118 Composite - NonECPM	1 Running Exhaust
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
117 Primary PM2.5 - Tirewear Particulate	10 Tirewear
116 Primary PM2.5 - Brakewear Particulate	9 Brakewear
116 Primary PM2.5 - Brakewear Particulate	9 Brakewear
116 Primary PM2.5 - Brakewear Particulate	9 Brakewear
116 Primary PM2.5 - Brakewear Particulate	9 Brakewear
116 Primary PM2.5 - Brakewear Particulate	9 Brakewear

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SL_2024_art_116_51	Refuse Truck	1	1	2025	1
SL_2024_art_116_43	School Bus	1	1	2025	1
SL_2024_art_116_42	Transit Bus	1	1	2025	1
SL_2024_art_116_41	Intercity Bus	1	1	2025	1
SL_2024_art_116_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_116_31	Passenger Truck	1	1	2025	1
SL_2024_art_116_21	Passenger Car	1	1	2025	1
SL_2024_art_116_11	Motorcycle	1	1	2025	1
SL_2024_art_115_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_115_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_115_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_115_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_115_54	Motor Home	1	1	2025	1
SL_2024_art_115_54	Motor Home	1	1	2025	1
SL_2024_art_115_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_115_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_115_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_115_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_115_51	Refuse Truck	1	1	2025	1
SL_2024_art_115_51	Refuse Truck	1	1	2025	1
SL_2024_art_115_43	School Bus	1	1	2025	1
SL_2024_art_115_43	School Bus	1	1	2025	1
SL_2024_art_115_42	Transit Bus	1	1	2025	1
SL_2024_art_115_42	Transit Bus	1	1	2025	1
SL_2024_art_115_41	Intercity Bus	1	1	2025	1
SL_2024_art_115_41	Intercity Bus	1	1	2025	1
SL_2024_art_115_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_115_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_115_31	Passenger Truck	1	1	2025	1
SL_2024_art_115_31	Passenger Truck	1	1	2025	1
SL_2024_art_115_21	Passenger Car	1	1	2025	1
SL_2024_art_115_21	Passenger Car	1	1	2025	1
SL_2024_art_115_11	Motorcycle	1	1	2025	1
SL_2024_art_115_11	Motorcycle	1	1	2025	1
SL_2024_art_112_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_112_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_112_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_112_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_112_54	Motor Home	1	1	2025	1
SL_2024_art_112_54	Motor Home	1	1	2025	1
SL_2024_art_112_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_112_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_112_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_112_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_112_51	Refuse Truck	1	1	2025	1
SL_2024_art_112_51	Refuse Truck	1	1	2025	1

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SL_2024_art_112_43	School Bus	1	1	2025	1
SL_2024_art_112_43	School Bus	1	1	2025	1
SL_2024_art_112_42	Transit Bus	1	1	2025	1
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SL_2024_art_112_41	Intercity Bus	1	1	2025	1
SL_2024_art_112_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_112_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_112_31	Passenger Truck	1	1	2025	1
SL_2024_art_112_31	Passenger Truck	1	1	2025	1
SL_2024_art_112_21	Passenger Car	1	1	2025	1
SL_2024_art_112_21	Passenger Car	1	1	2025	1
SL_2024_art_112_11	Motorcycle	1	1	2025	1
SL_2024_art_112_11	Motorcycle	1	1	2025	1
SL_2024_art_111_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_111_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_111_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_111_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_111_54	Motor Home	1	1	2025	1
SL_2024_art_111_54	Motor Home	1	1	2025	1
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SL_2024_art_111_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_111_52	Single Short Haul Truck	1	1	2025	1
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SL_2024_art_111_41	Intercity Bus	1	1	2025	1
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SL_2024_art_111_11	Motorcycle	1	1	2025	1
SL_2024_art_111_11	Motorcycle	1	1	2025	1
SL_2024_art_110_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_110_62	Combination Long Haul Truck	1	1	2025	1
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SL_2024_art_110_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_110_54	Motor Home	1	1	2025	1
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SL_2024_art_110_51	Refuse Truck	1	1	2025	1
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SL_2024_art_110_42	Transit Bus	1	1	2025	1
SL_2024_art_110_41	Intercity Bus	1	1	2025	1
SL_2024_art_110_41	Intercity Bus	1	1	2025	1
SL_2024_art_110_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_110_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_110_31	Passenger Truck	1	1	2025	1
SL_2024_art_110_31	Passenger Truck	1	1	2025	1
SL_2024_art_110_21	Passenger Car	1	1	2025	1
SL_2024_art_110_21	Passenger Car	1	1	2025	1
SL_2024_art_110_11	Motorcycle	1	1	2025	1
SL_2024_art_110_11	Motorcycle	1	1	2025	1
SL_2024_art_107_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_107_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_107_54	Motor Home	1	1	2025	1
SL_2024_art_107_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_107_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_107_51	Refuse Truck	1	1	2025	1
SL_2024_art_107_43	School Bus	1	1	2025	1
SL_2024_art_107_42	Transit Bus	1	1	2025	1
SL_2024_art_107_41	Intercity Bus	1	1	2025	1
SL_2024_art_107_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_107_31	Passenger Truck	1	1	2025	1
SL_2024_art_107_21	Passenger Car	1	1	2025	1
SL_2024_art_107_11	Motorcycle	1	1	2025	1
SL_2024_art_106_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_106_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_106_54	Motor Home	1	1	2025	1
SL_2024_art_106_53	Single Long Haul Truck	1	1	2025	1
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SL_2024_art_106_51	Refuse Truck	1	1	2025	1
SL_2024_art_106_43	School Bus	1	1	2025	1
SL_2024_art_106_42	Transit Bus	1	1	2025	1
SL_2024_art_106_41	Intercity Bus	1	1	2025	1
SL_2024_art_106_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_106_31	Passenger Truck	1	1	2025	1
SL_2024_art_106_21	Passenger Car	1	1	2025	1
SL_2024_art_106_11	Motorcycle	1	1	2025	1

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SL_2024_art_100_54	Motor Home	1	1	2025	1
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SL_2024_art_100_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_100_51	Refuse Truck	1	1	2025	1
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SL_2024_art_100_43	School Bus	1	1	2025	1
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SL_2024_art_100_42	Transit Bus	1	1	2025	1
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SL_2024_art_100_41	Intercity Bus	1	1	2025	1
SL_2024_art_100_41	Intercity Bus	1	1	2025	1
SL_2024_art_100_32	Light Commercial Truck	1	1	2025	1
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SL_2024_art_100_31	Passenger Truck	1	1	2025	1
SL_2024_art_100_21	Passenger Car	1	1	2025	1
SL_2024_art_100_21	Passenger Car	1	1	2025	1
SL_2024_art_100_11	Motorcycle	1	1	2025	1
SL_2024_art_100_11	Motorcycle	1	1	2025	1
SL_2024_art_91_62	Combination Long Haul Truck	1	1	2025	1
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SL_2024_art_91_54	Motor Home	1	1	2025	1
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SL_2024_art_91_51	Refuse Truck	1	1	2025	1
SL_2024_art_91_43	School Bus	1	1	2025	1
SL_2024_art_91_42	Transit Bus	1	1	2025	1
SL_2024_art_91_41	Intercity Bus	1	1	2025	1
SL_2024_art_91_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_91_31	Passenger Truck	1	1	2025	1
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SL_2024_art_90_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_90_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_90_54	Motor Home	1	1	2025	1
SL_2024_art_90_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_90_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_90_51	Refuse Truck	1	1	2025	1
SL_2024_art_90_43	School Bus	1	1	2025	1

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SL_2024_art_90_41	Intercity Bus	1	1	2025	1
SL_2024_art_90_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_90_31	Passenger Truck	1	1	2025	1
SL_2024_art_90_21	Passenger Car	1	1	2025	1
SL_2024_art_90_11	Motorcycle	1	1	2025	1
SL_2024_art_87_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_87_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_87_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_87_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_87_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_87_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_87_54	Motor Home	1	1	2025	1
SL_2024_art_87_54	Motor Home	1	1	2025	1
SL_2024_art_87_54	Motor Home	1	1	2025	1
SL_2024_art_87_54	Motor Home	1	1	2025	1
SL_2024_art_87_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_87_53	Single Long Haul Truck	1	1	2025	1
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SL_2024_art_87_51	Refuse Truck	1	1	2025	1
SL_2024_art_87_43	School Bus	1	1	2025	1
SL_2024_art_87_43	School Bus	1	1	2025	1
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SL_2024_art_87_43	School Bus	1	1	2025	1
SL_2024_art_87_42	Transit Bus	1	1	2025	1
SL_2024_art_87_42	Transit Bus	1	1	2025	1
SL_2024_art_87_42	Transit Bus	1	1	2025	1
SL_2024_art_87_42	Transit Bus	1	1	2025	1
SL_2024_art_87_41	Intercity Bus	1	1	2025	1
SL_2024_art_87_41	Intercity Bus	1	1	2025	1
SL_2024_art_87_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_87_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_87_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_87_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_87_31	Passenger Truck	1	1	2025	1
SL_2024_art_87_31	Passenger Truck	1	1	2025	1
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[illegible]

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90 Atmospheric CO2	1 Running Exhaust
90 Atmospheric CO2	1 Running Exhaust
90 Atmospheric CO2	1 Running Exhaust
90 Atmospheric CO2	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust
87 Volatile Organic Compounds	15 Crankcase Running Exhaust
87 Volatile Organic Compounds	13 Evap Fuel Leaks
87 Volatile Organic Compounds	11 Evap Permeation
87 Volatile Organic Compounds	1 Running Exhaust

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[illegible]

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SL_2024_art_87_21	Passenger Car	1	1	2025	1
SL_2024_art_87_21	Passenger Car	1	1	2025	1
SL_2024_art_87_21	Passenger Car	1	1	2025	1
SL_2024_art_87_21	Passenger Car	1	1	2025	1
SL_2024_art_87_11	Motorcycle	1	1	2025	1
SL_2024_art_87_11	Motorcycle	1	1	2025	1
SL_2024_art_87_11	Motorcycle	1	1	2025	1
SL_2024_art_87_11	Motorcycle	1	1	2025	1
SL_2024_art_79_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_79_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_79_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_79_61	Combination Short Haul Truck	1	1	2025	1
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SL_2024_art_79_54	Motor Home	1	1	2025	1
SL_2024_art_79_54	Motor Home	1	1	2025	1
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SL_2024_art_79_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_79_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_79_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_79_51	Refuse Truck	1	1	2025	1
SL_2024_art_79_51	Refuse Truck	1	1	2025	1
SL_2024_art_79_51	Refuse Truck	1	1	2025	1
SL_2024_art_79_51	Refuse Truck	1	1	2025	1
SL_2024_art_79_43	School Bus	1	1	2025	1
SL_2024_art_79_43	School Bus	1	1	2025	1
SL_2024_art_79_43	School Bus	1	1	2025	1
SL_2024_art_79_43	School Bus	1	1	2025	1
SL_2024_art_79_42	Transit Bus	1	1	2025	1
SL_2024_art_79_42	Transit Bus	1	1	2025	1
SL_2024_art_79_42	Transit Bus	1	1	2025	1
SL_2024_art_79_42	Transit Bus	1	1	2025	1
SL_2024_art_79_41	Intercity Bus	1	1	2025	1
SL_2024_art_79_41	Intercity Bus	1	1	2025	1
SL_2024_art_79_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_79_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_79_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_79_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_79_31	Passenger Truck	1	1	2025	1
SL_2024_art_79_31	Passenger Truck	1	1	2025	1

[illegible]

[illegible]

15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks

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SL_2024_art_79_31	Passenger Truck	1	1	2025	1
SL_2024_art_79_21	Passenger Car	1	1	2025	1
SL_2024_art_79_21	Passenger Car	1	1	2025	1
SL_2024_art_79_21	Passenger Car	1	1	2025	1
SL_2024_art_79_21	Passenger Car	1	1	2025	1
SL_2024_art_79_11	Motorcycle	1	1	2025	1
SL_2024_art_79_11	Motorcycle	1	1	2025	1
SL_2024_art_79_11	Motorcycle	1	1	2025	1
SL_2024_art_79_11	Motorcycle	1	1	2025	1
SL_2024_art_66_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_66_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_66_54	Motor Home	1	1	2025	1
SL_2024_art_66_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_66_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_66_51	Refuse Truck	1	1	2025	1
SL_2024_art_66_43	School Bus	1	1	2025	1
SL_2024_art_66_42	Transit Bus	1	1	2025	1
SL_2024_art_66_41	Intercity Bus	1	1	2025	1
SL_2024_art_66_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_66_31	Passenger Truck	1	1	2025	1
SL_2024_art_66_21	Passenger Car	1	1	2025	1
SL_2024_art_66_11	Motorcycle	1	1	2025	1
SL_2024_art_59_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_59_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_59_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_59_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_59_54	Motor Home	1	1	2025	1
SL_2024_art_59_54	Motor Home	1	1	2025	1
SL_2024_art_59_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_59_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_59_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_59_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_59_51	Refuse Truck	1	1	2025	1
SL_2024_art_59_51	Refuse Truck	1	1	2025	1
SL_2024_art_59_43	School Bus	1	1	2025	1
SL_2024_art_59_43	School Bus	1	1	2025	1
SL_2024_art_59_42	Transit Bus	1	1	2025	1
SL_2024_art_59_42	Transit Bus	1	1	2025	1
SL_2024_art_59_41	Intercity Bus	1	1	2025	1
SL_2024_art_59_41	Intercity Bus	1	1	2025	1
SL_2024_art_59_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_59_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_59_31	Passenger Truck	1	1	2025	1
SL_2024_art_59_31	Passenger Truck	1	1	2025	1
SL_2024_art_59_21	Passenger Car	1	1	2025	1

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SL_2024_art_59_11	Motorcycle	1	1	2025	1
SL_2024_art_59_11	Motorcycle	1	1	2025	1
SL_2024_art_58_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_58_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_58_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_58_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_58_54	Motor Home	1	1	2025	1
SL_2024_art_58_54	Motor Home	1	1	2025	1
SL_2024_art_58_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_58_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_58_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_58_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_58_51	Refuse Truck	1	1	2025	1
SL_2024_art_58_51	Refuse Truck	1	1	2025	1
SL_2024_art_58_43	School Bus	1	1	2025	1
SL_2024_art_58_43	School Bus	1	1	2025	1
SL_2024_art_58_42	Transit Bus	1	1	2025	1
SL_2024_art_58_42	Transit Bus	1	1	2025	1
SL_2024_art_58_41	Intercity Bus	1	1	2025	1
SL_2024_art_58_41	Intercity Bus	1	1	2025	1
SL_2024_art_58_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_58_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_58_31	Passenger Truck	1	1	2025	1
SL_2024_art_58_31	Passenger Truck	1	1	2025	1
SL_2024_art_58_21	Passenger Car	1	1	2025	1
SL_2024_art_58_21	Passenger Car	1	1	2025	1
SL_2024_art_58_11	Motorcycle	1	1	2025	1
SL_2024_art_58_11	Motorcycle	1	1	2025	1
SL_2024_art_57_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_57_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_57_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_57_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_57_54	Motor Home	1	1	2025	1
SL_2024_art_57_54	Motor Home	1	1	2025	1
SL_2024_art_57_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_57_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_57_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_57_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_57_51	Refuse Truck	1	1	2025	1
SL_2024_art_57_51	Refuse Truck	1	1	2025	1
SL_2024_art_57_43	School Bus	1	1	2025	1
SL_2024_art_57_43	School Bus	1	1	2025	1
SL_2024_art_57_42	Transit Bus	1	1	2025	1
SL_2024_art_57_42	Transit Bus	1	1	2025	1
SL_2024_art_57_41	Intercity Bus	1	1	2025	1

[illegible]

[illegible]

[illegible]

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SL_2024_art_57_41	Intercity Bus	1	1	2025	1
SL_2024_art_57_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_57_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_57_31	Passenger Truck	1	1	2025	1
SL_2024_art_57_31	Passenger Truck	1	1	2025	1
SL_2024_art_57_21	Passenger Car	1	1	2025	1
SL_2024_art_57_21	Passenger Car	1	1	2025	1
SL_2024_art_57_11	Motorcycle	1	1	2025	1
SL_2024_art_57_11	Motorcycle	1	1	2025	1
SL_2024_art_56_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_56_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_56_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_56_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_56_54	Motor Home	1	1	2025	1
SL_2024_art_56_54	Motor Home	1	1	2025	1
SL_2024_art_56_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_56_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_56_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_56_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_56_51	Refuse Truck	1	1	2025	1
SL_2024_art_56_51	Refuse Truck	1	1	2025	1
SL_2024_art_56_43	School Bus	1	1	2025	1
SL_2024_art_56_43	School Bus	1	1	2025	1
SL_2024_art_56_42	Transit Bus	1	1	2025	1
SL_2024_art_56_42	Transit Bus	1	1	2025	1
SL_2024_art_56_41	Intercity Bus	1	1	2025	1
SL_2024_art_56_41	Intercity Bus	1	1	2025	1
SL_2024_art_56_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_56_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_56_31	Passenger Truck	1	1	2025	1
SL_2024_art_56_31	Passenger Truck	1	1	2025	1
SL_2024_art_56_21	Passenger Car	1	1	2025	1
SL_2024_art_56_21	Passenger Car	1	1	2025	1
SL_2024_art_56_11	Motorcycle	1	1	2025	1
SL_2024_art_56_11	Motorcycle	1	1	2025	1
SL_2024_art_55_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_55_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_55_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_55_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_55_54	Motor Home	1	1	2025	1
SL_2024_art_55_54	Motor Home	1	1	2025	1
SL_2024_art_55_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_55_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_55_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_55_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_55_51	Refuse Truck	1	1	2025	1

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SL_2024_art_55_51	Refuse Truck	1	1	2025	1
SL_2024_art_55_43	School Bus	1	1	2025	1
SL_2024_art_55_43	School Bus	1	1	2025	1
SL_2024_art_55_42	Transit Bus	1	1	2025	1
SL_2024_art_55_42	Transit Bus	1	1	2025	1
SL_2024_art_55_41	Intercity Bus	1	1	2025	1
SL_2024_art_55_41	Intercity Bus	1	1	2025	1
SL_2024_art_55_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_55_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_55_31	Passenger Truck	1	1	2025	1
SL_2024_art_55_31	Passenger Truck	1	1	2025	1
SL_2024_art_55_21	Passenger Car	1	1	2025	1
SL_2024_art_55_21	Passenger Car	1	1	2025	1
SL_2024_art_55_11	Motorcycle	1	1	2025	1
SL_2024_art_55_11	Motorcycle	1	1	2025	1
SL_2024_art_54_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_54_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_54_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_54_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_54_54	Motor Home	1	1	2025	1
SL_2024_art_54_54	Motor Home	1	1	2025	1
SL_2024_art_54_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_54_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_54_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_54_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_54_51	Refuse Truck	1	1	2025	1
SL_2024_art_54_51	Refuse Truck	1	1	2025	1
SL_2024_art_54_43	School Bus	1	1	2025	1
SL_2024_art_54_43	School Bus	1	1	2025	1
SL_2024_art_54_42	Transit Bus	1	1	2025	1
SL_2024_art_54_42	Transit Bus	1	1	2025	1
SL_2024_art_54_41	Intercity Bus	1	1	2025	1
SL_2024_art_54_41	Intercity Bus	1	1	2025	1
SL_2024_art_54_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_54_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_54_31	Passenger Truck	1	1	2025	1
SL_2024_art_54_31	Passenger Truck	1	1	2025	1
SL_2024_art_54_21	Passenger Car	1	1	2025	1
SL_2024_art_54_21	Passenger Car	1	1	2025	1
SL_2024_art_54_11	Motorcycle	1	1	2025	1
SL_2024_art_54_11	Motorcycle	1	1	2025	1
SL_2024_art_53_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_53_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_53_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_53_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_53_54	Motor Home	1	1	2025	1

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SL_2024_art_53_54	Motor Home	1	1	2025	1
SL_2024_art_53_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_53_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_53_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_53_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_53_51	Refuse Truck	1	1	2025	1
SL_2024_art_53_51	Refuse Truck	1	1	2025	1
SL_2024_art_53_43	School Bus	1	1	2025	1
SL_2024_art_53_43	School Bus	1	1	2025	1
SL_2024_art_53_42	Transit Bus	1	1	2025	1
SL_2024_art_53_42	Transit Bus	1	1	2025	1
SL_2024_art_53_41	Intercity Bus	1	1	2025	1
SL_2024_art_53_41	Intercity Bus	1	1	2025	1
SL_2024_art_53_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_53_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_53_31	Passenger Truck	1	1	2025	1
SL_2024_art_53_31	Passenger Truck	1	1	2025	1
SL_2024_art_53_21	Passenger Car	1	1	2025	1
SL_2024_art_53_21	Passenger Car	1	1	2025	1
SL_2024_art_53_11	Motorcycle	1	1	2025	1
SL_2024_art_53_11	Motorcycle	1	1	2025	1
SL_2024_art_52_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_52_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_52_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_52_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_52_54	Motor Home	1	1	2025	1
SL_2024_art_52_54	Motor Home	1	1	2025	1
SL_2024_art_52_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_52_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_52_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_52_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_52_51	Refuse Truck	1	1	2025	1
SL_2024_art_52_51	Refuse Truck	1	1	2025	1
SL_2024_art_52_43	School Bus	1	1	2025	1
SL_2024_art_52_43	School Bus	1	1	2025	1
SL_2024_art_52_42	Transit Bus	1	1	2025	1
SL_2024_art_52_42	Transit Bus	1	1	2025	1
SL_2024_art_52_41	Intercity Bus	1	1	2025	1
SL_2024_art_52_41	Intercity Bus	1	1	2025	1
SL_2024_art_52_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_52_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_52_31	Passenger Truck	1	1	2025	1
SL_2024_art_52_31	Passenger Truck	1	1	2025	1
SL_2024_art_52_21	Passenger Car	1	1	2025	1
SL_2024_art_52_21	Passenger Car	1	1	2025	1
SL_2024_art_52_11	Motorcycle	1	1	2025	1

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SL_2024_art_51_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_51_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_51_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_51_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_51_54	Motor Home	1	1	2025	1
SL_2024_art_51_54	Motor Home	1	1	2025	1
SL_2024_art_51_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_51_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_51_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_51_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_51_51	Refuse Truck	1	1	2025	1
SL_2024_art_51_51	Refuse Truck	1	1	2025	1
SL_2024_art_51_43	School Bus	1	1	2025	1
SL_2024_art_51_43	School Bus	1	1	2025	1
SL_2024_art_51_42	Transit Bus	1	1	2025	1
SL_2024_art_51_42	Transit Bus	1	1	2025	1
SL_2024_art_51_41	Intercity Bus	1	1	2025	1
SL_2024_art_51_41	Intercity Bus	1	1	2025	1
SL_2024_art_51_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_51_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_51_31	Passenger Truck	1	1	2025	1
SL_2024_art_51_31	Passenger Truck	1	1	2025	1
SL_2024_art_51_21	Passenger Car	1	1	2025	1
SL_2024_art_51_21	Passenger Car	1	1	2025	1
SL_2024_art_51_11	Motorcycle	1	1	2025	1
SL_2024_art_51_11	Motorcycle	1	1	2025	1
SL_2024_art_36_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_36_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_36_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_36_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_36_54	Motor Home	1	1	2025	1
SL_2024_art_36_54	Motor Home	1	1	2025	1
SL_2024_art_36_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_36_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_36_52	Single Short Haul Truck	1	1	2025	1
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SL_2024_art_36_51	Refuse Truck	1	1	2025	1
SL_2024_art_36_51	Refuse Truck	1	1	2025	1
SL_2024_art_36_43	School Bus	1	1	2025	1
SL_2024_art_36_43	School Bus	1	1	2025	1
SL_2024_art_36_42	Transit Bus	1	1	2025	1
SL_2024_art_36_42	Transit Bus	1	1	2025	1
SL_2024_art_36_41	Intercity Bus	1	1	2025	1
SL_2024_art_36_41	Intercity Bus	1	1	2025	1
SL_2024_art_36_32	Light Commercial Truck	1	1	2025	1

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SL_2024_art_36_31	Passenger Truck	1	1	2025	1
SL_2024_art_36_31	Passenger Truck	1	1	2025	1
SL_2024_art_36_21	Passenger Car	1	1	2025	1
SL_2024_art_36_21	Passenger Car	1	1	2025	1
SL_2024_art_36_11	Motorcycle	1	1	2025	1
SL_2024_art_36_11	Motorcycle	1	1	2025	1
SL_2024_art_35_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_35_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_35_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_35_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_35_54	Motor Home	1	1	2025	1
SL_2024_art_35_54	Motor Home	1	1	2025	1
SL_2024_art_35_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_35_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_35_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_35_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_35_51	Refuse Truck	1	1	2025	1
SL_2024_art_35_51	Refuse Truck	1	1	2025	1
SL_2024_art_35_43	School Bus	1	1	2025	1
SL_2024_art_35_43	School Bus	1	1	2025	1
SL_2024_art_35_42	Transit Bus	1	1	2025	1
SL_2024_art_35_42	Transit Bus	1	1	2025	1
SL_2024_art_35_41	Intercity Bus	1	1	2025	1
SL_2024_art_35_41	Intercity Bus	1	1	2025	1
SL_2024_art_35_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_35_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_35_31	Passenger Truck	1	1	2025	1
SL_2024_art_35_31	Passenger Truck	1	1	2025	1
SL_2024_art_35_21	Passenger Car	1	1	2025	1
SL_2024_art_35_21	Passenger Car	1	1	2025	1
SL_2024_art_35_11	Motorcycle	1	1	2025	1
SL_2024_art_35_11	Motorcycle	1	1	2025	1
SL_2024_art_31_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_31_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_31_54	Motor Home	1	1	2025	1
SL_2024_art_31_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_31_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_31_51	Refuse Truck	1	1	2025	1
SL_2024_art_31_43	School Bus	1	1	2025	1
SL_2024_art_31_42	Transit Bus	1	1	2025	1
SL_2024_art_31_41	Intercity Bus	1	1	2025	1
SL_2024_art_31_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_31_31	Passenger Truck	1	1	2025	1
SL_2024_art_31_21	Passenger Car	1	1	2025	1
SL_2024_art_31_11	Motorcycle	1	1	2025	1

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[illegible]

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SL_2024_art_30_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_30_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_30_51	Refuse Truck	1	1	2025	1
SL_2024_art_30_43	School Bus	1	1	2025	1
SL_2024_art_30_42	Transit Bus	1	1	2025	1
SL_2024_art_30_41	Intercity Bus	1	1	2025	1
SL_2024_art_30_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_30_31	Passenger Truck	1	1	2025	1
SL_2024_art_30_21	Passenger Car	1	1	2025	1
SL_2024_art_30_11	Motorcycle	1	1	2025	1
SL_2024_art_3_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_3_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_3_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_3_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_3_54	Motor Home	1	1	2025	1
SL_2024_art_3_54	Motor Home	1	1	2025	1
SL_2024_art_3_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_3_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_3_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_3_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_3_51	Refuse Truck	1	1	2025	1
SL_2024_art_3_51	Refuse Truck	1	1	2025	1
SL_2024_art_3_43	School Bus	1	1	2025	1
SL_2024_art_3_43	School Bus	1	1	2025	1
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SL_2024_art_3_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_3_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_3_31	Passenger Truck	1	1	2025	1
SL_2024_art_3_31	Passenger Truck	1	1	2025	1
SL_2024_art_3_21	Passenger Car	1	1	2025	1
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SL_2024_art_3_11	Motorcycle	1	1	2025	1
SL_2024_art_3_11	Motorcycle	1	1	2025	1
SL_2024_art_2_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_2_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_2_61	Combination Short Haul Truck	1	1	2025	1
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SL_2024_art_2_54	Motor Home	1	1	2025	1
SL_2024_art_2_54	Motor Home	1	1	2025	1
SL_2024_art_2_53	Single Long Haul Truck	1	1	2025	1

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[illegible]

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SL_2024_art_2_42	Transit Bus	1	1	2025	1
SL_2024_art_2_41	Intercity Bus	1	1	2025	1
SL_2024_art_2_41	Intercity Bus	1	1	2025	1
SL_2024_art_2_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_2_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_2_31	Passenger Truck	1	1	2025	1
SL_2024_art_2_31	Passenger Truck	1	1	2025	1
SL_2024_art_2_21	Passenger Car	1	1	2025	1
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SL_2024_art_2_11	Motorcycle	1	1	2025	1
SL_2024_art_2_11	Motorcycle	1	1	2025	1
SL_2024_art_1_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_1_62	Combination Long Haul Truck	1	1	2025	1
SL_2024_art_1_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_1_61	Combination Short Haul Truck	1	1	2025	1
SL_2024_art_1_61	Combination Short Haul Truck	1	1	2025	1
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SL_2024_art_1_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_1_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_1_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_1_53	Single Long Haul Truck	1	1	2025	1
SL_2024_art_1_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_1_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_1_52	Single Short Haul Truck	1	1	2025	1
SL_2024_art_1_52	Single Short Haul Truck	1	1	2025	1
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SL_2024_art_1_51	Refuse Truck	1	1	2025	1
SL_2024_art_1_51	Refuse Truck	1	1	2025	1
SL_2024_art_1_43	School Bus	1	1	2025	1
SL_2024_art_1_43	School Bus	1	1	2025	1
SL_2024_art_1_43	School Bus	1	1	2025	1
SL_2024_art_1_43	School Bus	1	1	2025	1
SL_2024_art_1_42	Transit Bus	1	1	2025	1

[illegible]

2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
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2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
2 Carbon Monoxide (CO)	15 Crankcase Running Exhaust
2 Carbon Monoxide (CO)	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	13 Evap Fuel Leaks
1 Total Gaseous Hydrocarbons	11 Evap Permeation
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	13 Evap Fuel Leaks
1 Total Gaseous Hydrocarbons	11 Evap Permeation
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	13 Evap Fuel Leaks
1 Total Gaseous Hydrocarbons	11 Evap Permeation
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	13 Evap Fuel Leaks
1 Total Gaseous Hydrocarbons	11 Evap Permeation
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust
1 Total Gaseous Hydrocarbons	13 Evap Fuel Leaks
1 Total Gaseous Hydrocarbons	11 Evap Permeation
1 Total Gaseous Hydrocarbons	1 Running Exhaust
1 Total Gaseous Hydrocarbons	15 Crankcase Running Exhaust

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SL_2024_art_1_42	Transit Bus	1	1	2025	1
SL_2024_art_1_41	Intercity Bus	1	1	2025	1
SL_2024_art_1_41	Intercity Bus	1	1	2025	1
SL_2024_art_1_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_1_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_1_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_1_32	Light Commercial Truck	1	1	2025	1
SL_2024_art_1_31	Passenger Truck	1	1	2025	1
SL_2024_art_1_31	Passenger Truck	1	1	2025	1
SL_2024_art_1_31	Passenger Truck	1	1	2025	1
SL_2024_art_1_31	Passenger Truck	1	1	2025	1
SL_2024_art_1_21	Passenger Car	1	1	2025	1
SL_2024_art_1_21	Passenger Car	1	1	2025	1
SL_2024_art_1_21	Passenger Car	1	1	2025	1
SL_2024_art_1_21	Passenger Car	1	1	2025	1
SL_2024_art_1_11	Motorcycle	1	1	2025	1
SL_2024_art_1_11	Motorcycle	1	1	2025	1
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5 Weekdays	8	49 UT	49035 Salt Lake County	490350	11
5 Weekdays	8	49 UT	49035 Salt Lake County	490350	11

13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust
15 Crankcase Running Exhaust
13 Evap Fuel Leaks
11 Evap Permeation
1 Running Exhaust

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ENVIRONMENTAL PROTECTION AGENCY (EPA)
Clean Diesel Funding Assistance Program FY 2020
Request for Proposals (RFP)
EPA-OAR-OTAQ-20-02

EPA Region: 8

Project Title: FY20 Utah National Clean Diesel Program

Applicant Information:

- Utah Department of Environmental Quality, Division of Air Quality
- 195 North 1950 West, Salt Lake City, Utah 84114-4820
- 801-536-4019 (office), 801-536-0085 (fax)
- Lisa Burr, lburr@utah.gov, deq.utah.gov
- DUNS number: 826001059

Eligible Entity: The Utah Department of Environmental Quality (UDEQ), Division of Air Quality (DAQ), is a State entity with jurisdiction over air quality and is responsible for monitoring and enforcing regulations pertaining to the CAA. DAQ is eligible to apply for assistance under this solicitation, in accordance with 42 U.S.C. 16131 and CFDA 66.039.

Budget Summary:

EPA Funding	Voluntary Cost-Share	Mandatory Cost-Share	Total Project Cost
\$2,600,000	\$0	\$7,087,500	\$9,687,500

Project Location: The DAQ will target vehicles that operate a minimum of 50% in the Provo and/or Salt Lake, UT, particulate matter (PM)_{2.5} nonattainment areas (NAA) and the Northern and Southern Wasatch Front ozone nonattainment areas. The counties included in these designations are: Box Elder, Davis, Salt Lake, Tooele, Utah, and Weber.

Short Project Description: Freight (non-port goods movement) and Municipal: Replace 24 Class 8 refuse haulers and short-haul delivery trucks and 10 Class 5-7 short-haul delivery trucks with current model year vehicles; School Bus: Replace five school buses with current model year busses.

WORK PLAN

Section 1. Project Summary and Overall Approach

A. VEHICLES AND TECHNOLOGIES:

A description of the vehicles targeted for emission reductions, including the project eligibility factors listed in Section I.B.4., and the ownership, usage and remaining life of the target engines as described in Section I.B.6.

Based on past experience with local clean diesel projects, DAQ has included a mix of vehicle replacement projects that are likely to be submitted through an open application process and viable for meeting the required criteria. DAQ will maintain an ongoing, open application period throughout the duration of the project period and evaluate applications every quarter (October 1, January 1, April 1, and July 1). Submitted projects will be vetted for eligibility based on the following information: engine model year, gross vehicle weight ratings, horsepower, status of operation, description of use, location of use in the nonattainment areas, remaining useful life, fleet owners' retirement schedules, duration of ownership, and ability to meet the mandatory match requirements and program timelines. Vehicles that meet the eligibility requirements will receive awards on a first-come, first-served basis and with the condition that the replaced vehicle will be permanently disabled.

The applicant must sign the application under penalty of perjury that the information they've provided in the application is true and correct. The application includes a description of the fleet owner's normal retirement schedule and period of ownership, an estimated number of years remaining in the useful life of the vehicle, current odometer reading, and a photo of the side profile of the vehicle. Projects that have less than a minimum of three years remaining in their useful life will be disqualified. The application process also requires the submittal of a fleet description form, which includes the annual miles traveled, fuel usage, and annual idling hours, along with the vehicle and engine specifications.

Photos of the vehicle identification number (VIN) plate and gross vehicle weight rating (GVWR), and engine plate showing the engine model year, make, model, horsepower, family name, displacement, and serial number for each vehicle proposed for replacement are also required to ensure the vehicle meets the engine model year and GVWR eligibility requirements. The VIN and engine plates will also be used to document the requirements for the new replacement vehicle to ensure the new vehicle is not in a higher weight class than the existing vehicle.

To evaluate whether the vehicle is currently operational, DAQ will require current registration and insurance documents. The fleet owner will also be required to provide a description of the operation and ownership period. If the fleet owner did not own and operate the vehicle for two years prior to replacement, the vehicle will be disqualified.

DAQ anticipates a mix of projects to be identified and will target on-highway, Class 5-8 vehicles, engine model years 2009 and older. Vehicles may include refuse haulers owned by private businesses or public agencies, school buses owned by school districts, and short-haul trucks owned by various local fleet owners/operators, such as independent service providers for mail/package deliveries,

retailers for residential and commercial plumbing, heating and cooling, irrigation and hydronics, auto parts, and other local suppliers and delivery services. The target vehicles will run daily local routes from central warehousing and distribution facilities and rail yards to various retail, business, residential, and school locations. DAQ will disqualify vehicles with usage rates less than 7,000 annual miles.

Upon award, DAQ will require financial assistance agreements and terms and conditions documents that outline the requirements and conditions of the grant, based on the requirements of the Environmental Protection Agency's Request for Applications criteria.

A description of all verified and/or certified technologies to be used or funded by the applicant.

According to the California Air Resources Board (CARB) Executive Orders examples for current on-highway engine model years, engine manufacturers have included the following emissions control systems: three-way/oxidizing catalyst (TWO/OC); warm-up (WU) catalyst; diesel particulate filter (DPF); periodic trap oxidizer (PTOX); heated/oxygen sensor (HO2S/02S); heated/air-fuel ratio sensor (HAFS/AFS); throttle body fuel injection (TBI); sequential/multi-port fuel injection (SFI/MFI); direct gasoline injection (DGI); gaseous carburetor (GCARB); indirect/direct diesel injection (IDI/DDI); turbo/super charger (TC/SC); charge air cooler (CAC); pulsed/secondary air injection (PAIR/AIR); smoke puff limiter (SPL); full/partial/partial with a fine/on-board diagnostic (OBD(F)/(P)/(\$)); engine/powertrain control module (ECM/PCM), exhaust gas recirculation (EGR), engine modification (EM), NO_x adsorption catalyst (NAC); oxidizing catalysts (OC), selective catalytic reduction - urea (SCR-U), ammonia oxidation catalyst (AMOX). Also, all 2007 and newer heavy-duty, diesel engines are required to have closed crankcase ventilation systems or route the crankcase emissions to the exhaust up-stream of exhaust aftertreatment systems. The current model year engines meet the following emissions standards: 0.14 grams/break hp-hour (g/bhp-hr) for non-methane/hydrocarbon (NMHC), 0.20 g/bhp-hr for oxides of nitrogen (NO_x), 15.5 g/bhp-hr for carbon monoxide (CO), and 0.01 g/bhp-hr for PM.

A discussion of how the applicant has weighed the available/eligible technology options for the target fleet and has arrived at the chosen diesel emission reduction solution(s).

Class 5-8 diesel vehicles are the largest mobile source contributors of NO_x emissions in the state's NAAs. Since NO_x is a precursor to PM_{2.5} and ozone, the primary criteria pollutants of concerns in the state, reducing NO_x emissions from these vehicle categories is beneficial for helping the state to attain the National Ambient Air Quality Standards (NAAQS) for ozone and PM_{2.5}.

Participation by fleet owners is more likely to occur through vehicle replacement projects because of the sustainability and longer-term benefits to the fleet owner, such as reduced maintenance and repair costs and improved fuel economy.

Applications which include engine replacements and vehicle replacements must include the applicant's plans for engine/vehicle scrappage.

The participating fleet owners/operators will be required through contractual obligation with the DAQ to scrap the original vehicles by drilling a three-inch-by-three-inch hole in the engine block, the part of the engine that contains the cylinders, and cutting through the chassis rails on both sides of the vehicle between the front and rear axles. These activities will be required to take place within 90 days of replacement and be documented by an electronic copy of a continuous, clear, unedited video, taken by the fleet owner/operator that captures the side profile of the vehicle; the VIN plate; the engine plate; the three-inch-by-three-inch hole drilled into the engine block; and the cut chassis rails. An EPA-approved Certificate of Destruction will be required to further document appropriate destruction occurred.

B. ROLES AND RESPONSIBILITIES:

A discussion of the roles and responsibilities of the applicant organization and any other project partners, including subrecipients, beneficiaries, and/or contractors.

DAQ will dedicate two full-time employees (FTE) to coordinate, monitor, and oversee the program to ensure successful and compliant use of grant funds throughout the project period, report on progress, and promote its success. DAQ staff will educate target fleets on the funding opportunity, develop mechanisms for fleets to propose vehicles and equipment for evaluation, evaluate potential projects, identify participating vehicles and equipment, oversee grant agreements and contracts, procurement, budget, monitor, and promote program accomplishments. In addition, a full-time contract/grant analyst has been hired to oversee the contracts between DAQ and the participating fleet owners.

Through contractual obligation, participating fleet owners/operators will be responsible for: demonstrating that their vehicle(s)/equipment are eligible to participate in the grant; purchasing the new vehicles/equipment, according to approved specifications; providing the mandatory cost-share; permanently scrapping the original vehicle(s), according to the program requirements; meeting all other program requirements; and submitting required documentation to DAQ in a timely manner.

C. TIMELINE AND MILESTONES: *Project period September 1, 2020, to August 31, 2023*

A detailed timeline for the project including milestones for specific tasks, such as bidding, procurement, installation and reports. Applicants should schedule time for Final Report preparation into the project timeline.

- September 2020 – June 2023: DAQ publicizes grant award to the media, announces award on Utah National Clean Diesel Program website, and introduces program to fleet owners/operators.
- October 2020 – June 2023: DAQ opens and maintains an open application process for fleet owners/operators to submit potential vehicle replacement projects for evaluation to participate.
- December 2020: DAQ submits quarterly reports to EPA.
- January, April, July 2021–2023 and October 2021-2022: DAQ evaluates potential projects from the quarterly submittals.
- February, May, August 2021-2022 and November 2020-2022: DAQ identifies successful projects from the quarterly submittals.
- March, June, September 2021-2022 and December 2020-2022: DAQ develops award letters, grant agreements, and terms and conditions documents for the successful participants from current quarter. DAQ submits quarterly reports to EPA.
- April, July, October 2021-2022 and January 2021-2023: DAQ meets with participating fleet owners/operators to review grant processes and requirements and finalize grant contracts.
- May 2021-2023 and August and November 2021-2022: Fleet owners/operators submit a minimum of two bids for the new vehicle purchases to DAQ for approval.
- June 2021-2023 and September and December 2021-2022: Fleet owners make new replacement vehicle purchases. DAQ submits quarterly reports to EPA.
- July 2021-2023, October 2021-2022, and January 2022-2023: Participating fleet owners/operators remove from service and permanently disable original vehicles and submit remaining scrappage and purchasing documentation to DAQ for reimbursement.
- August–September 2021-2022: DAQ submits quarterly reports to EPA.
- December 2021-2022: DAQ submits quarterly reports to EPA.
- November 2023: DAQ submits final report to EPA.

Section 2. Project Location

Include a detailed discussion of the project location, the area(s) where the affected vehicles operate. If a single application includes vehicles operating in more than one area, this section of the work plan should indicate where each vehicle operates and the amount (%) of time the vehicles typically operate in each area.

More than 80% of Utah's population live and work in the Salt Lake and Provo PM_{2.5} nonattainment portions of the Wasatch Front where construction projects and major transportation systems are most prevalent. Because the Wasatch Front is only approximately 18 miles wide, most of the land within this area has been developed and has experienced rapid growth from Utah's aggressive economic development trends. The Wasatch Front is a central point for national freight distribution and is home to thousands of warehouses, distribution centers, and terminals for the country's largest trucking companies, carriers, and suppliers, creating a high presence of freight traffic, resulting in these areas experiencing a disproportionate share of the air pollution burden when compared to the rest of the state. As such, priority will be given to vehicle projects that operate a minimum of 50% of their time in the seven PM_{2.5} nonattainment counties and the Northern and Southern Wasatch Front ozone nonattainment areas.

As the "Crossroads of the West" for freight traffic, Utah provides a life-line to critical transportation arteries for freight distribution coast to coast and between Canada and Mexico. Interstates 15, 80, 84, and 70 and other freight routes provide connections to Utah's central transportation network, which serves as a strategic hub for highway, rail, inter-modal, pipeline and air freight in the Western United States.

The central point of the western United States, Utah boasts access to inter-modal hubs for warehousing and distribution and is home to some of the country's largest trucking companies, carriers, and suppliers. The Salt Lake International Airport, Union Pacific Railroad, and thousands of distribution centers and terminals create a high presence of transportation. The target vehicles/equipment utilize these distribution centers and terminals as their home-base for sorting, prioritizing, moving cargo, and loading/unloading their daily deliveries. Hundreds of delivery trucks and diesel equipment are consolidated in these locations at the same times every day, creating a heavy presence of diesel emissions.

Goods movement is only expected to grow in the coming years as population is expected to double and state leaders work to position Utah for becoming a global logistics and distribution hub to the world. Salt Lake City, the State's capital, will be home to an inland port, over 16,000-acres of multimodal freight distribution infrastructure that will provide strategic access to major interstates and highways, seaports, international airports, and railways.

1

County	State	City	Zip Code	Fleet, Types and Number of Affected Vehicles	% of Time Vehicles Spend in Area	Non Attainment Area	Air Toxic Assessment Area	Goods Movement
Salt Lake, Davis, Weber, Utah	Utah	County-wide	84116, 84040, 84405, 84601	39 Class 5-8 (refuse haulers and/or short-haul delivery trucks) and school buses	100%	X	X	Union Pacific Railroad, Salt Lake International Airport, future Utah Inland Port, thousands of privately-owned distribution centers and terminals (Amazon, FedEx, UPS, Walmart, etc.)

Section 3. Benefits to the Community

How the proposed project will address the needs and concerns of affected communities, especially any communities or populations that have faced or are facing environmental justice concerns. Applications should describe the population, community or group that will be affected by the project and how they will directly benefit from the emissions reductions that will result from the project.

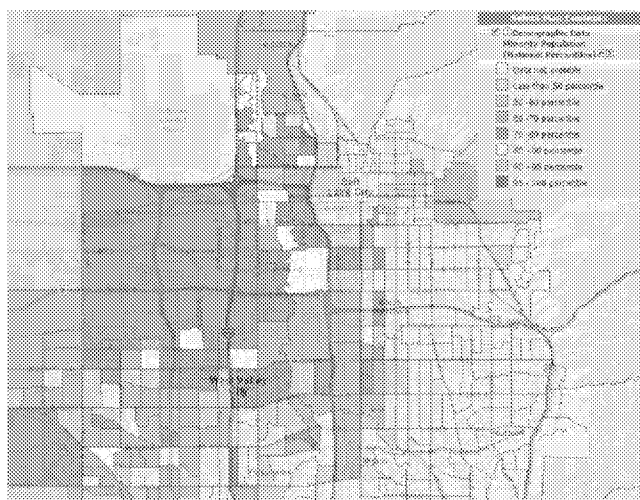


Figure 1. Percent Minority Population, 2012-2016 ACS

Vehicles and equipment that participate in the Program will operate in the industrial, low-income/minority communities in the PM_{2.5} and ozone nonattainment areas. According to EPA's Environmental Justice mapping and screening tool, the low-income population in the Salt Lake area is significant with values as high as the 99 percentile. The percent minority population is also significant, with values as high as 91% (Figure 1). PM_{2.5} levels in these areas are also up to 96% higher than those observed at other locations within the state and up to 98% for ozone, as indicated by the "environmental justice index" for PM_{2.5} (Figure 2) and Ozone (Figure 3).

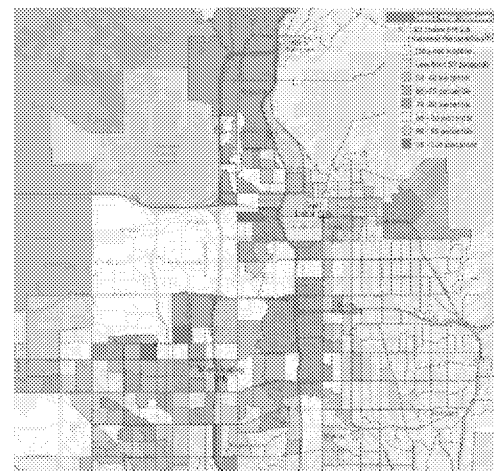


Figure 2. Index for PM_{2.5} State Percentiles

These communities are located in close proximity to warehousing and distribution centers, oil refineries, metal processing, painting/coating manufacturing and electricity generation facilities, making them susceptible to elevated emissions. These communities are also potentially impacted by emissions from smaller unregulated facilities such as nearby railroads, roadways, and highways.

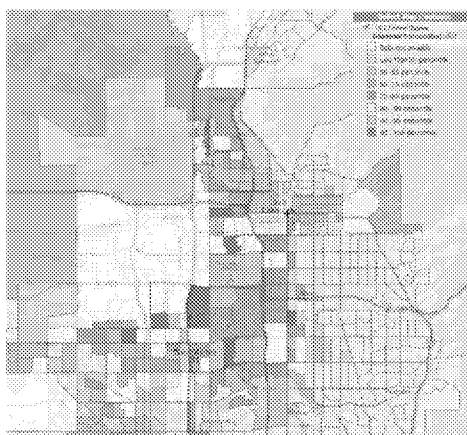


Figure 3. Index for Ozone State Percentiles

Moreover, given Utah's unique topography and meteorology, these communities, which are located at low elevations in the Salt Lake Valley, are exposed to high levels of air toxics and PM_{2.5} for longer duration during wintertime inversions compared to more affluent neighborhoods located at higher elevations. These socio-economic, environmental, meteorological and topographical factors create a disproportionately higher population exposure to air toxics in these communities compared to surrounding areas. The proposed work will help reduce the health effects in areas with highest priority environmental justice concerns. They will also help increase awareness on air pollution in underserved communities in Utah.

Section 4. Community Engagement and Partnerships

Detailed discussion of the applicant's efforts and plans for engaging affected communities with respect to the design and performance of the project and obtaining support from project partners to more effectively perform the project. Discuss the approach for incorporating input from affected communities throughout the design and performance of the project, and/or whether their design of the proposed project involved and incorporated input from affected communities.

Air pollution in Northern Utah has been reported as some of the worst in the nation for several years and has sparked reaction from several Utah communities and organizations. In 2012, the Utah Clean Air Partnership – UCAIR was formed as a government program, initiated by Utah Governor, Gary Herbert, to bring business, industry, education, government, and Utah residents together to improve Utah’s air quality statewide. UCAIR has developed into a non-profit organization in an effort to streamline efforts and resources from individuals, businesses and communities that, together, strategize ways to improve Utah’s air quality. UCAIR partners meet monthly to share efforts and identify ways of working with each other to design projects that educate the community and have measurable outcomes. DAQ is an active partner within this organization that consists of 147 different organizations and 389 members that has resulted in effective feedback and ideas for increased participation.

In addition to the monthly roundtable sessions with UCAIR partners, DAQ management hosts one-on-one monthly meetings with air quality advocacy groups such as Breathe Utah, HEAL Utah, Sierra Club Utah Chapter, Western Resource Advocates, League of Women Voters, Utah Moms for Clean Air, and Utah Physicians for a Healthy Environment to provide updates, receive feedback, and share resources.

A close-working relationship between the DAQ and the Utah Trucking Association (UTA) has advanced fleet owner/operator participation in similar programs through the use of UTA’s network of members, communication resources, and industry insights. Meetings with DAQ staff and UTA executives have culminated relationships with other industries such as the Associated General Contractors of Utah and the Home Builders Association of Utah. DAQ intends to continue these partnerships as the program evolves.

Networking with these groups provides an opportunity to share details for implementing the program, identify participating vehicles, and share outreach activities.

Section 5. Project Sustainability

Detailed discussion of the applicant’s and/or project partner’s ability to promote and continue efforts to reduce emissions after EPA funding for this project has ended.

DAQ will promote and continue efforts to reduce emissions after EPA funding for this project has ended through the following 2019 approved legislation, appropriations totaling \$29,013,000 one-time funding and \$45,400 on-going funding for air quality improvements, and other DAQ programs and activities. These emissions reduction initiatives are a result of Governor Herbert’s 2017 goal to reduce emissions 25% by 2026:

Applications will be evaluated based on whether the applicant and/or project partners:

- *have existing policies or new commitments to, by the end of the project period, adopt idle-reduction policies, adopt contract specifications requiring the use of cleaner, more efficient vehicles and equipment, complete an up-to-date mobile source equipment inventory, or adopt other strategies to promote and continue efforts to reduce diesel emissions.*
 - House Bill (HB) 148, Vehicle Idling Revisions – Reduces restrictions for enforcement of local anti-idling ordinances (<https://le.utah.gov/~2019/bills/static/HB0148.html>)
 - HB 107, Sustainable Transportation and Energy Plan Act Amendments – amends the Sustainable Transportation Plan Act to include a large-scale natural gas utility. Includes a pilot program and provides for air quality improvements (<https://le.utah.gov/~2019/bills/static/HB0107.html>)
 - HB 109, Hydrogen Fuel Production Amendments - provides \$2,200 for fiscal year (FY) 2020 and \$5,000 for FY 2021 - Modifies provisions related to Permanent Community Impact Fund and High Cost Infrastructure Development Tax Credit Act. Expands definition of “throughput infrastructure project” to include a facility that stores, produces, or distributes hydrogen as fuel in zero emission motor vehicles, for electrical generation, or for industrial use (<https://le.utah.gov/~2019/bills/static/HB0109.html>)
 - HB 139, Motor Vehicle Emissions Amendments – Amends penalties for visible emissions (“rolling coal”), prohibits distraction or endangerment of vulnerable highway users by excessive exhaust, and adds reporting requirements (<https://le.utah.gov/~2019/bills/static/HB0139.html>)
 - Senate Bill (SB) 2, Electric Vehicle Charging Stations at State Sites: Provides \$2,000,000 one-time funding for electric vehicle charging stations at state sites (<https://le.utah.gov/~2019/bills/static/SB0002.html>)
 - SB 2, Electric Vehicle Charging Equipment: Provides \$4,990,000 one-time funding of incentives for businesses and government entities to install electric vehicle charging equipment (<https://le.utah.gov/~2019/bills/static/SB0002.html>)
 - SB 3, Pre-2007 State Vehicle Replacement Plan: Provides \$4,000,000 one-time funding for replacing 238 pre-2007 engine model year state diesel vehicles (<https://le.utah.gov/~2019/bills/static/SB0003.html>)
 - SB 2, Weatherization: Provides \$1,000,000 one-time funding for weatherization assistance that reduces energy consumption and NO_x emissions from home heating appliances (<https://le.utah.gov/~2019/bills/static/SB0002.html>)
 - HB 218, Construction Code Modifications – Adopts the full commercial energy code (<https://le.utah.gov/~2019/bills/static/HB0218.html>)

- HB 353, Reduction of Single Occupancy Vehicle Trips Pilot Program Amendments – Provides \$500,000 one-time funding for FY 2020 for free-fare transit on select poor air quality days (<https://le.utah.gov/~2019/bills/static/HB0353.html>)
- House Concurrent Resolution (HCR) R 9, Concurrent Resolution Commending Jordan School District on Its Fleet of Natural Gas School Buses – Commends Jordan School District for its contribution to improved public health and fiscal responsibility by acquiring school buses that operate on compressed natural gas (<https://le.utah.gov/~2019/bills/static/HCR009.html>)
- HCR 11, Concurrent Resolution Encouraging the Purchase of Tier 3 Gasoline – Encourages gasoline retailers to purchase gasoline supply from the refineries who have committed to manufacturing Tier 3 compliant gasoline (<https://le.utah.gov/~2019/bills/static/HCR011.html>)
- HCR 3, Concurrent Resolution Urging the EPA to Update Switcher Locomotive Emission Standards – Urges EPA to update switcher locomotive emission standards to reduce harmful emissions (<https://le.utah.gov/~2019/bills/static/HCR003.html>)
- SB 21, Sunset Reauthorization, Air Conservation Act – Extends the repeal date of the Air Conservation Act (<https://le.utah.gov/~2019/bills/static/SB0021.html>)
- HB 433, Inland Port Amendments – Encourages all Class 5-8 designated truck traffic entering the authority jurisdictional land to meet the heavy-duty highway compression-ignition diesel engine and urban bus exhaust emission standards for year 2007 and later (<https://le.utah.gov/~2019/bills/static/HB0433.html>)

Additionally, the DAQ Compliance Branch has made a new policy to, whenever allowed through Section 19-1-603(3) of the Utah Code, put 80% of settlement agreements into an Environmental Mitigation Response Fund (EMRF) for air quality emissions reductions programs. The most recent example of this comes from a final settlement agreement in February that resulted in a \$56,000 payment into the fund. The DAQ Compliance Branch is in several other settlement negotiations that will likely lead to additional funds for the EMRF.

- *have a publicly available baseline mobile source emission inventory for PM_{2.5} and/or NO_x that was completed after 2016 or commit to completing one before the end of the project period.*
 - 2017 statewide emission inventory for mobile sources found at:
 - Non-Road: <https://documents.deq.utah.gov/air-quality/inventory/DAQ-2019-009044.pdf>
 - On-Road: <https://documents.deq.utah.gov/air-quality/inventory/DAQ-2019-009050.pdf>
 - SB 3, Mobile Monitoring Data Collection: Provides \$50,000 one-time funding for air quality monitors on TRAX lines (<https://le.utah.gov/~2019/bills/static/SB0003.html>)
 - SB 144, Environmental Quality Monitoring Amendments – Provides \$517,800 for FY 2020 and \$40,000 for FY 2021 for the UDEQ to create a baseline for monitoring air and water pollution from the Inland Port (<https://le.utah.gov/~2019/bills/static/SB0144.html>)
 - The Utah legislature appropriated \$500,000 per year ongoing for research to investigate the specific air quality problems that Utah faces. The research topics will include improving our understanding of atmospheric chemistry for PM_{2.5} and ozone, improving Utah's emissions inventories, improving the understanding of regional pollutant transport, and the intersection of air quality regulations and health consequences.
 - A rule was recently promulgated (R307-505) that requires oil and gas sources in the state to register with the DAQ. Required registration will improve the oil and gas emissions inventory and compliance assessments.
- *have a publicly available plan to reduce mobile source emissions that includes specific PM_{2.5} and/or NO_x emissions targets that was completed after 2016 or commit to completing one before the end of the project period.*
 - Reclassification of the Salt Lake PM_{2.5} nonattainment areas from Moderate to Serious, resulting in more stringent requirements for the State Implementation Plan (SIP). The Salt Lake Serious SIP was completed and submitted to EPA in December of 2018 and included updates to emissions inventories, including mobile sources, a mobile vehicle emissions budget, and a base year of 2016 and a 2019 attainment year. The plan is a documented commitment that demonstrates the DAQ's efforts to reduce emissions in order to attain the National Ambient Air Quality Standards. For more information, visit: <https://deq.utah.gov/legacy/pollutants/p/particulate-matter/pm25/serious-area-state-implementation-plans/index.htm>
 - Public involvement for the development of the Serious Area SIP included input from environmental advocates, industry, local-government officials, and the general public. This input helped DAQ create a SIP that protects public health and allows economic growth. The Division holds monthly meetings with environmental advocates to discuss the Serious Area SIP development and other air quality planning issues. For more information, visit: <https://deq.utah.gov/legacy/pollutants/p/particulate-matter/pm25/serious-area-state-implementation-plans/public-participation.htm>
 - DAQ wrote and is implementing approximately 30 new area source rules as part of the PM_{2.5} SIP. The new rules address a broad range of sources, including the printing and coating industries, solid fuel burning, and consumer products high in VOCs. A significant amount of public outreach is necessary for the efficacy of these rules.

- DAQ submitted PM_{2.5} Maintenance Plans for its PM_{2.5} NAAs in December 2019. These plans demonstrate how DAQ will ensure these areas will maintain attainment of the NAAQS through 2035.
- *have established or commit to establishing before the end of the project period, a clear point of contact in a public platform (e.g. newsletter, website) for community issues and complaints (specific to air quality or broader) and a publicly documented policy or process for getting community input on operations and projects that impact air quality. The process could be recent (within a year) or upcoming (before the end of the project period) meetings and/or a policy or process to otherwise get input (e.g. a standing citizen advisory committee).*
 - The DAQ keeps a website regularly updated at airquality.utah.gov. The homepage contains a News and Announcements section to update the public on projects that impact air quality. The page also has links for the public to report environmental incidents and to send complaints related to dust, smoke, odor, and any other air quality concern to division staff. Additionally, the DAQ maintains a public comment page that helps the public find and make comments on plans, rules, and permits that are currently out for public comment. That webpage is <https://deq.utah.gov/public-notice-archive/public-comment-division-air-quality>. Members of the public interested in receiving monthly updates on rules and plans that are available for public comment may sign up for a listserve on the website as well.
 - The Utah Air Quality Board enacts rules pertaining to air quality activities. The UDEQ's Director serves as a member of the Board and the DAQ Division Director serves as the Board's Executive Secretary. Board meetings are held monthly, and members of the public are encouraged to make informational presentations and comment during the meetings regarding air quality concerns, including complaints and comments on rules and plans being considered by the Board.
 - Advocates meetings. The DAQ holds these meetings with air quality advocacy groups who represent a wide range of public interests. Meetings are held regularly on an every-other month schedule. Groups are invited to share their concerns and updates on air quality initiatives. DAQ staff uses these meetings to update the advocacy groups and ask for feedback on air quality initiatives, incentive programs, and air quality planning projects.
 - The DAQ also actively participates in various air quality groups to provide updates and hear and respond to questions and complaints. These groups include the Utah legislative bi-partisan Clean Air Caucus, UCAIR partners meetings, and the Utah Air Quality Policy Advisory Board.

Section 6. Environmental Results—Outputs, Outcomes and Performance Measures

A. OUTPUTS AND OUTCOMES¹:

The overall goal for DAQ through this project is to partner with EPA in making progress toward meeting attainment of the National Ambient Air Quality Standards (NAAQS) by reducing pollutants that contribute to the wintertime PM_{2.5} and summertime ozone problems the state experiences and creating a cleaner, safer, and healthier environment for the citizens of Utah. To achieve this, the following diesel emissions reductions and other outputs and outcomes are proposed:

Activities:	Outputs:	Outcomes:						
			Approximate Diesel Equivalent Gallons of Fuel	NO _x (short tons)	PM _{2.5} (short tons)	HC (short tons)	CO (short tons)	CO ₂ (short tons)
Replace 24 Class 8 diesel trucks (refuse haulers and/or short-haul delivery)	24 diesel trucks, average engine model year 2004, permanently disabled and replaced with engines that meet current EPA standards.	Annual Reductions	4,164	1.458	0.144	0.140	0.54	46.9
		Lifetime Reductions	13,572	4.375	0.430	0.422	1.624	152.7
		Lifetime Total Cost Effectiveness		\$939,896	\$9,102,165	\$9,248,265	\$2,394,712	\$33,325
		Lifetime Capital Cost Effectiveness		\$3,481,094	\$33,711,724	\$34,252,834	\$8,869,304	\$123,427
Replace 10 Class 5-7 short-haul diesel trucks	10 diesel trucks, average engine model year 2004, permanently disabled and replaced with engines that meet current EPA standards.	Annual Reductions	1,320	2.504	0.230	0.377	1.380	14.8
		Lifetime Reductions	3,960	7.513	0.691	1.131	4.141	44.6
		Lifetime Total Cost Effectiveness		\$107,812	\$1,172,224	\$716,477	\$195,602	\$18,182
		Lifetime Capital Cost Effectiveness		\$399,303	\$4,341,567	\$2,653,620	\$724,451	\$67,340
Replace 5 diesel school buses	5 diesel school buses, average engine model year 2004, permanently disabled and replaced with engines that meet current EPA standards.	Annual Reductions	475	0.228	0.022	0.033	0.119	5.3
		Lifetime Reductions	1,425	0.683	0.066	0.099	0.358	16.0
		Lifetime Total Cost Effectiveness		\$296,548	\$3,059,867	\$2,044,709	\$565,014	\$12,632
		Lifetime Capital Cost Effectiveness		\$1,098,326	\$11,332,843	\$7,572,998	\$2,092,646	\$46,784
	Totals	Annual Reductions	5,959	4.190	0.396	0.550	2.040	67.000
		Lifetime Reductions	18,957	12.571	1.187	1.652	6.123	213.300
		Lifetime Total Cost Effectiveness		\$1,344,256	\$13,334,256	\$12,009,451	\$3,155,328	\$64,139
		Lifetime Capital Cost Effectiveness		\$4,978,723	\$49,386,134	\$44,479,452	\$11,686,401	\$237,551

¹ Calculations are from EPA's Diesel Emissions Quantifier and CO₂ reductions reflect EPA's Greenhouse Gas Emissions Standards for medium and heavy-duty vehicles.

Additional Outputs and Outcomes:

- Activities contribute toward demonstration of attaining the NAAQS
- The implementation of air quality policies for freight movement and state fleet vehicles as evidenced through HB 433 (<https://le.utah.gov/~2019/bills/static/HB0433.html>) and SB 3, Pre-2007 State Vehicle Replacement Plan (<https://le.utah.gov/~2019/bills/static/SB0003.html>)
- Community engagement through program implementation and sharing technical information and best practices for diesel fleet operators
- Partnerships with five to ten local dealerships and dozens of fleet owners
- Potential for 20 grant contracts/agreements with fleet owners
- Quarterly and final reporting to EPA for accounting of measurable performance throughout the project period, with summaries of environmental outcomes through the final report
- Distribution of program accomplishments related to the environmental activities through program branding, websites, State of Environment reports, press releases, public involvement processes, and social media
- Health benefits to the community that total \$195,000 from PM_{2.5} reductions in Salt Lake County²
- New vehicle purchases encourage the inclusion of idle-reduction technologies and SCR technology in the engine configuration that reduces the EGR and diesel particulate filter regeneration duty cycles, which can improve fuel economy 3-5%, according to Diesel Technology Forum, dieselforum.org
- Changes in driver behavior for turning off engines during idle time due to more reliable engines
- Scrappage of 53 outdated, dirty diesel engines

B. PERFORMANCE MEASURES:

Describe what performance measurements, timeline of milestones, and/or other means will be used to track, measure and report progress towards achieving the expected outputs and outcomes and how the results of the project will be evaluated.

Verifying each vehicle's eligibility, ensuring a competitive procurement process, and documenting vehicle scrappage are key measures that ensure expected outputs and outcomes are met. To accomplish this, participating fleet owners/operators, through penalty of perjury, will be contractually obligated to submit documentation that demonstrates their vehicle's eligibility to DAQ. This includes the following: vehicle miles traveled, fuel usage, idling time, the vehicle's purpose, route description, primary location, odometer reading, photos of the original vehicle's side profile, vehicle identification number (VIN) plate, engine plate, and gross vehicle weight rating (GVWR), horsepower, and the vehicle's current registration and proof of insurance that demonstrate current operation in the State of Utah. The owner/operator must also describe their normal attrition schedule for the vehicle and explain how the vehicle has a minimum of three years remaining in the useful life.

The eligibility demonstration will later be used to compare with a video that demonstrates the original, approved vehicle was scrapped. Details of the video requirements are outlined in grant contracts, which state that an electronic copy of a continuous, clear, unedited video that captures the side profile of the vehicle, the VIN plate, engine plate, three-inch-by-three-inch hole drilled into the engine block, and cut chassis must be submitted along with an EPA-approved Certificate of Destruction.

Before the fleet owners/operators dismantle the vehicle, controls are put into place to ensure the new vehicle purchases are accomplished through a fair and open competitive process, which ensures efficient use of program funding. Fleet owners/operators are required to obtain a minimum of two bids from two separate vendors for the same type of vehicle and submit those bids to DAQ for evaluation and approval. DAQ staff will verify that the candidate vehicles/equipment are similar in size, GVWR, and use as the original vehicle. Through contractual obligation, the fleet owners/operators will be required to get DAQ approval before purchasing their new vehicle. Grant reimbursement will be based on the lowest bid. Before grant reimbursement is made to the fleet owner/operator, photos of the new vehicle's engine plate must be submitted to DAQ for evaluation to ensure the new vehicle that is placed into service reflects the vehicle represented in the bids.

Tracking and reporting on progress toward achieving the expected outputs and outcomes will be done quarterly when financial reports are generated that show draw-downs of grant funds for the period. Draw-downs reflect payments made to participants for effective completion of projects that result in diesel emissions reductions. Quarterly reports include a comparison of actual accomplishments to the anticipated outputs and outcomes and timelines, tracking timeliness of progress. Further, weekly meetings with DAQ staff and managers will be scheduled to evaluate progress, identify required actions, and outline next steps. Final reports will document actual outputs and outcomes, calculated from EPA's Diesel Emissions Quantifier.

C. PERFORMANCE PLAN:

Describe plan for tracking and measuring progress toward achieving the expected project outputs and outcomes (What are the measurable short term and longer term results the project will achieve? How does the plan measure progress in achieving the expected results and how will the approach use resources effectively and efficiently?)

Measurable short-term:

² According to the EPA's Diesel Emissions Quantifier.

- Number of grant agreements/contracts signed by participating fleet owners/operators
- Number of vehicles/equipment evaluated and approved by DAQ for participation
- Number of new vehicle purchases
- Number of vehicles/equipment scrapped
- Amount of reimbursements made to fleet owners/operators

Short-term results will be measured using a form to track progress on program deliverables. The deliverables include the number of vehicles/equipment, executed grant contracts, participant submittal of vehicle information, DAQ approval of vehicle eligibility, submittal of bids for new vehicle purchases, DAQ approval of bids, submittal of scrappage documentation, DAQ approval of scrappage documentation, submittal of documents for the new vehicle purchase, such as invoices and proof of payment to verify cost-share commitment was met. DAQ staff is able to efficiently and effectively manage activities and documentation by using a shared drive and email account for tracking communications and data in one place.

Measurable long-term:

- Lifetime emissions reductions from the purchase of new vehicle models: new vehicles have improved fuel economy, drivetrain systems, and aerodynamics that translate to added environmental benefits through reduced CO₂ emissions, measured by number of vehicles scrapped and new vehicle purchases.
- Reports generated, website hits, press releases, and social media activity: widespread dissemination of program's environmental achievements, measured by the number of reports generated for large audiences and resulting inquiries, the number of hits on DAQ's Clean Diesel website, number of news stories generated by press releases, and the amount of activity on social media.
- Number of future vehicle replacement projects: partnerships developed to carry out the environmental activities will result in an indirect dissemination of information about the success of the Program, encouraging broader participation, measured by the number of future vehicle replacement projects.
- Quarterly and final reporting to EPA: an accountable measure of performance to ensure the environmental objectives are met within the appropriate timeline and budget. This will document any setbacks that may occur. The final report will measure environmental achievements, cost, and any barriers that may have taken place throughout the grant period and provide a comparison of anticipated outputs and outcomes to actual achievements.

Section 7. Programmatic Capability and Past Performance

A. PAST PERFORMANCE:

Project Title	Assistance Agreement No.	Funding Agency	CFDA No.
FY17 National Clean Diesel Funding Assistance Program	DE-96857601-1	EPA	66.039
FY18 National Clean Diesel Funding Assistance Program	DE-96846501	EPA	66.039
FY19 National Clean Diesel Funding Assistance Program	DE-96846701	EPA	66.039

These assistance agreements are all currently active. Continual progress has been and is being made and reported to EPA. DAQ has not experienced any major issues that would prevent the agency from meeting the proposed outputs and outcomes in these assistance agreements.

B. REPORTING REQUIREMENTS: See Table

C. ORGANIZATIONAL EXPERIENCE:

DAQ has been the recipient of 25 clean diesel awards from EPA over the last twelve years and eight Targeted Air Shed Grant awards over the last three years and has successfully completed 17 of the agreements by meeting reporting deadlines, completing the projects by the completion due dates, and providing details of the projects in the final technical reports. The FY17, FY18, and FY19 National Clean Diesel Cooperative Agreements are currently in process and making timely progress toward meeting the

EPA Cooperative Agreements with UDEQ	Award Amount	UDEQ Report Submission Date	Report included progress towards achieving the outputs and outcomes? If no progress, how was the reason documented?
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 1	\$2,300,000	1/30/2018	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 2		5/7/2018	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 3		8/13/2018	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 4		11/14/2018	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 5		2/4/2019	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 6		5/8/2019	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301: Qtr. 7		8/15/2019	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301-1: Qtr. 8		10/30/2019	Yes
FY17 National Clean Diesel Funding Assistance Program- DE-96850301-1: Qtr. 9		2/11/2020	Yes
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 1	\$2,398,599	5/8/2019	Yes
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 2		8/15/2019	Yes
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 3		10/30/2019	Yes
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 4		2/11/2020	Yes
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 5		TBD	TBD
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 6		TBD	TBD
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 7		TBD	TBD
FY18 National Clean Diesel Funding Assistance Program- DE-96857601: Final Report		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 1	\$2,400,000	10/30/2019	Yes
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 2		2/11/2020	Yes
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 3		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 4		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 5		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 6		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Qtr. 7		TBD	TBD
FY19 National Clean Diesel Funding Assistance Program- DE-96857601: Final Report		TBD	TBD

outputs and outcomes. Timely quarterly reports showing progression toward achieving the anticipated goals have been submitted as required. Given this experience and the work products that have been developed over the years, DAQ is well-positioned to timely and successfully achieve the objectives of the proposed project.

D. STAFF AND RESOURCES:

DAQ will dedicate one FTE, and as needed, a second FTE to ensure vehicle eligibility, organize outreach and promotion, oversee procurement and scrappage requirements, meet reporting requirements, and see that the outputs and outcomes of the Program are met.

Lisa Burr has been overseeing the Utah National Clean Diesel Program, the Clean Air Retrofit, Replacement, and Off-Road Technology (CARROT) Program, the Utah Clean Fuels Grant Program, and the Volkswagen (VW) Settlement for the past ten years and will continue to serve in the capacity of Project Manager for future clean diesel projects. Lisa has an Associate of Applied Science Degree in Business Systems Technologies and Bachelor of Science Degree in Technical Sales, seven years previous experience as a Program Coordinator in the automotive industry, and has spent the last ten years working at DAQ in the Air Quality Policy Section as an Environmental Planning Consultant. Lisa has been working as a liaison between industry and government entities for 17 years. She is familiar with government contracts, procurement processes, automotive-related services, emission reduction technologies, and is able to dedicate the majority of her time towards overseeing the clean diesel projects that are awarded to Utah.

Lisa provides agency management with technical expertise in issues related to environmental research, analysis, planning, policy development, trends, coordination and management of partnership agreements. Her position requires a strong ability to analyze data, form conclusions and develop recommendations for planning, programs, agreements, regulations, etc. She must also find, gather and collect data and other information and organize the information in a clear and concise manner while meeting critical deadlines. Their organizational skills are also needed to ensure compliance with contract terms and policies and procedures of various programs and to oversee budgetary responsibilities of multiple projects.

In addition, Courtney Ehrlich has a Bachelor of Science in Environmental Science and a Master of Science in Sustainability and has spent two years working with Lisa on the Utah Clean Diesel, CARROT, and VW Settlement programs and will continue in that capacity for this program. DAQ has also hired a contract/grant analyst to oversee grant contracts/agreements with the participants of the grant and track award amounts, payments, personnel expenses, and run balances.

Section 8. Budget Narrative and Detail

A. EXPENDITURE OF AWARDED GRANT FUNDS:

Approach: DAQ will approach the proposed projects as Programmatic Support Costs and reimburse participating fleet owners/operators, beneficiaries of the Program, for the allowable cost-share of the eligible equipment.

Procedure: Working with the State's Attorney General's Office, DAQ will provide contractual terms and conditions of the grant requirements and required certifications for participating fleet owners/operators, including procurement and scrappage procedures. The procurement process will require the fleet owners/operators to obtain multiple bids for the vehicles. DAQ will base the amount to reimburse on the lowest bid.

Controls: Reimbursement will only be made to the fleet owner/operator after an internal review process has determined that all grant requirements have been met, including scrappage and mandatory cost-share documentation. Fleet owner/operators will be contractually obligated to meet certain milestones by specific dates in order to ensure outputs and outcomes are met in a timely and adequate manner.

B. BUDGET NARRATIVE:

Description of the budget and estimated funding amounts for each work component/task.

DAQ requests funding for 20% of three and 11% of one full-time employees (FTE) to this project for three years. Because DAQ has been administering similar programs for several years, much of the work products are developed and systems already in place. If additional staff time is needed, resources are available to accommodate. State of Utah employee benefits are calculated at 58% of their annual salary. DAQ's indirect cost rate is currently 12.78% and is calculated from Personnel and Fringe Benefits costs. This negotiated rate ends June 30, 2020.

Participant Support Costs are estimates based on current average costs for a variety of new Class 8 trucks, ranging from \$100,000 to \$600,000, and current average costs for a variety of Class 5-7 vehicles ranging from \$75,000 - \$200,000. Considering potential price increases between the development of this proposal and when projects are implemented, costs reflected in the budget are rounded up. The breakdown of the participant supports costs show the project partners will contribute the required 75% of the cost for the new vehicle purchases, while the grant program will cover the allowed 25%.

Include a detailed description of how the applicant will obtain the cost-share and how the funding will be used.

The cost-share funds will be met by the participating fleet owners/operators through contractual obligation to fund 75% of the cost for the new vehicle purchases. Grant payments made to the participants will be made as reimbursements after the participant has demonstrated full payment of the new replacement vehicle.

C. BUDGET DETAIL					
FY20 NATIONAL CLEAN DIESEL FUNDING ASSISTANCE PROGRAM					
				EPA Funding	Mandatory Cost Share
Personnel (All Listed are 100% FTE)	Annual Salary		% of FTE for Three Years		
Environmental Planning Consultant	\$67,500		20%	\$40,500	
Environmental Planning Consultant	\$64,500		20%	\$38,700	
Contract/Grant Analyst II	\$49,500		20%	\$29,700	
Administrative Services Manager	\$65,000		11%	\$21,450	
TOTAL PERSONNEL				\$130,350	\$0
Fringe Benefits					
Calculated based on Personnel amount, and includes: Retirement, 401k, Social Security, Medicare, Workman's Comp, Unemployment Insurance, Long Term Disability, Termination Additive					
TOTAL FRINGE BENEFITS	calculated at:	58%		\$75,603	\$0
Travel					
TOTAL TRAVEL				\$0	\$0
Equipment	Cost/Unit		QTY		
				\$0	\$0
TOTAL EQUIPMENT			0	\$0	\$0
Supplies	Cost/Unit		QTY		
TOTAL SUPPLIES			0	\$0	\$0
Contractual	Labor rate (\$/hour):	Duration (hours per unit):	QTY		
TOTAL CONTRACTUAL			0	\$0	\$0
Other (includes Participant Support Costs)	Cost/Unit		QTY		
Participant Support Costs					
Class 8 Diesel Vehicle Replacements (refuse haulers and/or short-haul delivery)	\$300,000		24	\$1,800,000	\$5,400,000
Class 5-7 Diesel Vehicle Replacements	\$150,000		10	\$375,000	\$1,125,000
School Buses	\$150,000		5	\$187,500	\$562,500
Building & Site Rental				\$1,800	
Utilities				\$1,300	
LAN/WAN				\$1,000	
Phone				\$590	
Printing/Photocopy				\$536	
TOTAL OTHER			39	\$2,367,726	\$7,087,500
TOTAL DIRECT				\$2,573,679	\$7,087,500
TOTAL INDIRECT (based on OMB Circular A-87 Cognizant Agency Negotiation Agreement. Percentage taken from personnel and benefits)			12.78%	\$26,321	\$0
TOTAL FUNDING				\$2,600,000	\$7,087,500
TOTAL PROJECT COST				\$9,687,500	

Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 12/28/2020 6:34:24 PM
To: Engels, Alan [engels.alan@epa.gov]
CC: McPhilliamy, Marisa [McPhilliamy.Marisa@epa.gov]
Subject: RE: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Hi Alan,

I'm not sure, but Marisa McPhilliamy (R8 Air Division) *may* have responsive records/emails for the piece on:

“any reduction of NOx emissions in ... Montana, ... or Utah as a result of Volkswagen’s environmental mitigation trust.”

This may be from her work with the national Diesel Emissions Reduction Act (DERA) grants that she handles for Region 8. I have reached out to Marisa, but she is off-line until Wednesday, December 30th.

Thanks!

Tim

Tim Russ
Environmental Scientist
USEPA Region 8
Air and Radiation Division
Air Toxics, Radiation and Modeling Branch
1595 Wynkoop Street (8ARD-TRM)
Denver, CO 80202-1129
Ph. (303) 312-6479
e-mail: russ.tim@epa.gov

From: Engels, Alan <engels.alan@epa.gov>
Sent: Monday, December 28, 2020 11:08 AM
To: Russ, Timothy <Russ.Tim@epa.gov>
Subject: RE: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Tim,

Is there anyone else in the region who might have responsive emails or records?

Alan Engels
Regional FOIA Officer
US EPA, Region 8
1595 Wynkoop St.
8ORC-LCG
Denver, CO 80202

(303) 312-6306
Engels.alan@EPA.gov



From: Russ, Timothy <Russ.Tim@epa.gov>

Sent: Monday, December 28, 2020 7:42 AM

To: Engels, Alan <engels.alan@epa.gov>

Subject: RE: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Hi Alan,

For my response below:

- "EPA's approval or disapproval of vehicle anti-tampering provisions" of any SIP submitted by Montana or Utah (and other states in other regions)

Tim: I would likely have responsive electronic records for the five (5) vehicle inspection and maintenance (I/M) programs located in Utah (Cache County, Davis County, Salt Lake County, Utah County, and Weber County.) Montana does not have an I/M program, so no records for them.

Yes, those potentially responsive records would be in email.

Thanks!

Tim

Tim Russ
Environmental Scientist
USEPA Region 8
Air and Radiation Division
Air Toxics, Radiation and Modeling Branch
1595 Wynkoop Street (8ARD-TRM)
Denver, CO 80202-1129
Ph. (303) 312-6479
e-mail: russ.tim@epa.gov

From: Engels, Alan <engels.alan@epa.gov>

Sent: Thursday, December 24, 2020 5:49 AM

To: Russ, Timothy <Russ.Tim@epa.gov>

Subject: RE: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Tim, you answered the question:

- Does Region 8 have any responsive records?

Can you tell me:

- Would any of the responsive records be located in email?

Alan Engels
Regional FOIA Officer
US EPA, Region 8
1595 Wynkoop St.
8ORC-LCG
Denver, CO 80202

(303) 312-6306
Engels.alan@EPA.gov



From: Boydston, Michael <Boydston.Michael@epa.gov>
Sent: Wednesday, December 23, 2020 5:26 PM
To: Engels, Alan <engels.alan@epa.gov>
Subject: FW: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Alan – Here's some info from Tim. See you in January –
Mike

Michael Boydston
Senior Assistant Regional Counsel
EPA Region 8
303.312.7103

From: Russ, Timothy <Russ.Tim@epa.gov>
Sent: Wednesday, December 23, 2020 1:19 PM
To: Boydston, Michael <Boydston.Michael@epa.gov>
Cc: Leone, Kevin <Leone.Kevin@epa.gov>; Fiedler, Kerri <Fiedler.Kerri@epa.gov>
Subject: FW: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Hi Mike,

Please see my responses, as in **blue type**, below.

Thanks!

Tim

Tim Russ
Environmental Scientist
USEPA Region 8
Air and Radiation Division
Air Toxics, Radiation and Modeling Branch
1595 Wynkoop Street (8ARD-TRM)
Denver, CO 80202-1129

Ph. (303) 312-6479
 e-mail: russ.tim@epa.gov

From: Boydston, Michael <Boydston.Michael@epa.gov>
Sent: Monday, December 21, 2020 9:04 AM
To: Leone, Kevin <Leone.Kevin@epa.gov>; Russ, Timothy <Russ.Tim@epa.gov>
Cc: Joffe, Brian <Joffe.Brian@epa.gov>; Risko, Dianna <Risko.Dianna@epa.gov>; Aldinger, Dayle <Aldinger.Dayle@epa.gov>; Engels, Alan <engels.alan@epa.gov>
Subject: RE: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Hi Tim and Kevin –

I'm not sure if Alan has reached out about this yet, so apologies for any duplication, but our office has been asked a couple of questions about a FOIA request. The parts potentially relevant to Region 8 seek records related to:

- “EPA’s approval or disapproval of vehicle anti-tampering provisions” of any SIP submitted by Montana or Utah (and other states in other regions)

Tim: I would likely have responsive electronic records for the five (5) vehicle inspection and maintenance (I/M) programs located in Utah (Cache County, Davis County, Salt Lake County, Utah County, and Weber County.) Montana does not have an I/M program, so no records for them.

- “any request made by a state, state agency, or political subdivision of a state regarding the impact of the conduct identified in DOJ’s January 4, 2016 complaint on MOVES modeling” and EPA responses

Tim: It would help to see more of the request on this issue. Unless it’s with respect to involving one of our States or the R8 Office, I’m not sure what this complaint was about. However, if the complaint was with respect to specific components/use of the MOVES model, then OTAQ would have the relevant records.

- “any reduction of NOx emissions in ... Montana, ... or Utah as a result of Volkswagen’s environmental mitigation trust.”

Tim: I can’t readily say that I have retained any specific information on NOx emission reductions in MT and UT for their use of their portion of the VW mitigation funds. MT and UT may have publicly provided such information or perhaps OECA may have such information.

Please don’t look for records yet, or try to describe what we would have in detail. This is the initial stage. The questions for us now are **only**:

- Does Region 8 have any responsive records?
- Would any of the responsive records be located in email?

If you could give a quick answer today that would be really helpful. Thanks so much.

Michael Boydston
 Senior Assistant Regional Counsel
 EPA Region 8
 303.312.7103

From: Meekins, Tanya <Meekins.Tanya@epa.gov>
Sent: Monday, December 21, 2020 8:43 AM
To: Calderon, Wanda <Calderon.Wanda@epa.gov>; Cohen, Mitchell <cohen.mitchell@epa.gov>; Ferrara, Helen <Ferrara.Helen@epa.gov>; Ferreras-DeJesus, Jacqueline <Ferreras-DeJesus.Jacqueline@epa.gov>; Gonzalez, Eduardo

<Gonzalez.EduardoJ@epa.gov>; Simon, Paul <Simon.Paul@epa.gov>; Bradford, Deanna <Bradford.Deanna@epa.gov>; Donaldson, Yerusha <donaldson.yerusha@epa.gov>; Ford, Mark <Ford.Mark@epa.gov>; Hill, Latasha <Hill.Latasha@epa.gov>; Johnson, LaGayla <Johnson.Lagayla@epa.gov>; Kirst, Tina <kirst.tina@epa.gov>; Langley, Shirley <Langley.Shirley@epa.gov>; Aldinger, Dayle <Aldinger.Dayle@epa.gov>; Boydston, Michael <Boydston.Michael@epa.gov>; Engels, Alan <engels.alan@epa.gov>; Joffe, Brian <Joffe.Brian@epa.gov>; Risko, Dianna <Risko.Dianna@epa.gov>; Wiener, Tally <Wiener.Tally@epa.gov>

Subject: Need reply - FOIA contacts for Regions 2, 6, & 8 Important, reply requested Freedom of Information Act request EPA-2021-000565

Hello

I am following up on the email below.

I'm seeking the appropriate contact from Regions 2, 6, & 8 regarding coordination on the attached FOIA request.

As outlined below, I'm initially seeking an answer to these two questions:

Would your office potentially have responsive records?

Would the search of records require an email search?

Thank you.

From: Meekins, Tanya

Sent: Monday, December 14, 2020 4:02 PM

To: Flores, Priscilla (Feliciano) <Flores.Priscilla@epa.gov>; Knapp, Michael <Knapp.Michael@epa.gov>; Lao, Judy <Lao.Judy@epa.gov>; Schena, Cristeen <Schena.Cristeen@epa.gov>; Smart, Mark <smart.mark@epa.gov>; Calderon, Wanda <Calderon.Wanda@epa.gov>; Cohen, Mitchell <cohen.mitchell@epa.gov>; Ferrara, Helen <Ferrara.Helen@epa.gov>; Ferreras-DeJesus, Jacqueline <Ferreras-DeJesus.Jacqueline@epa.gov>; Gonzalez, EduardoJ <Gonzalez.EduardoJ@epa.gov>; Bigioni, Neil <bigioni.neil@epa.gov>; Bostic, Donna <Bostic.Donna@epa.gov>; Dru, Jacobine <Dru.Jacobine@epa.gov>; Bradley, Megan <Bradley.Megan@epa.gov>; Frankel, Michael <frankel.michael@epa.gov>; Graff, Jeannine <Graff.Jeannine@epa.gov>; Armstrong, Kathy <Armstrong.Kathy@epa.gov>; Hines, Andrea <hines.andrea@epa.gov>; Cody, Karen <Cody.Karen@epa.gov>; Cruver, Melvin <Cruver.Melvin@epa.gov>; Daniels-Lewis, Alicia <Daniels-Lewis.Alicia@epa.gov>; Johnson, Priscilla <Johnson.Priscilla@epa.gov>; Brady, Wanda <brady.wanda@epa.gov>; Callahan, Adrienne <callahan.adrienne@epa.gov>; Gupta, Kaushal <Gupta.Kaushal@epa.gov>; Klassman, Debra <klassman.debra@epa.gov>; Lupton, Jane <lupton.jane@epa.gov>; Bradford, Deanna <Bradford.Deanna@epa.gov>; Donaldson, Yerusha <Donaldson.Yerusha@epa.gov>; Ford, Mark <Ford.Mark@epa.gov>; Hill, Latasha <Hill.Latasha@epa.gov>; Langley, Shirley <Langley.Shirley@epa.gov>; Murdock, James <Murdock.James@epa.gov>; Chen, Alexander <Chen.Alex@epa.gov>; Drennen, Michele <Drennen.Michele@epa.gov>; Stevens, Edie <Stevens.Edie@epa.gov>; Stoy, Alyse <Stoy.Alyse@epa.gov>; Aldinger, Dayle <aldinger.dayle@epa.gov>; Boydston, Michael <Boydston.Michael@epa.gov>; Engels, Alan <engels.alan@epa.gov>; Joffe, Brian <Joffe.Brian@epa.gov>; Risko, Dianna <Risko.Dianna@epa.gov>; Johnson, Ivry <Johnson.Ivry@epa.gov>; Armsey, Steven <Armsey.Steven@epa.gov>; Busterud, Gretchen <Busterud.Gretchen@epa.gov>; Campbell, Rich <Campbell.Rich@epa.gov>; Dreyfus, Bethany <Dreyfus.Bethany@epa.gov>; Henderson, Alita <Henderson.Alita@epa.gov>; Castanon, Lisa <Castanon.Lisa@epa.gov>; Connery, Shannon <Connery.Shannon@epa.gov>; Dugan, Brett <Dugan.Brett@epa.gov>; Edgell, Joe <Edgell.Joe@epa.gov>; Noel, Jan <Noel.Jan@epa.gov>; Warren, Aumbirh <Warren.Aumbirh@epa.gov>; Belser, Evan <Belser.Evan@epa.gov>; Iddings, Brianna <Iddings.Brianna@epa.gov>; Kaul, Meetu <Kaul.Meetu@epa.gov>; Barnes, Cassandra <Barnes.Cassandra@epa.gov>; Newman, Maya <Newman.Maya@epa.gov>; Bermes, Peter <Bermes.Peter@epa.gov>

Subject: Important, reply requested Freedom of Information Act request EPA-2021-000565

Hello Regional colleagues, OECA, and OGC colleagues:

I am the FOIA coordinator for the Office of Transportation and Air Quality (OTAQ) here in HQs.

You are receiving this email because your office/region may potentially have responsive records to the attached FOIA request.

The requester is Mr. Michael Steinberg from the lawfirm Sullivan and Cromwell. He is seeking records on issues related to SIPs, MOVES, and the Volkswagen's enforcement case.

There are 16 bullet points outlined in the request.

Based on our initial read, the following offices would most likely have records in response to specific items:

Q1 (Regions 1, 5, 6, & 8)
Q2 (Region 6)
Q3 (all Regions)
Q4-10 (OTAQ lead and possible OECA & OGC custodians)
Q11-16 (OECA lead and possible OGC & OTAQ custodians)

What I am initially seeking is an answer to the following 2 questions:

Would your office potentially have responsive records?

Would the search of records require an email search?

Please provide your response by COB Monday, December 21st and let me know who should be the primary point of contact for future discussions.

Once I have this initial feedback, I will follow up on next steps.

Thank you.

Tanya Meekins
FOIA Coordinator
Office of Transportation
and Air Quality

Message

From: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
Sent: 12/16/2020 5:43:46 PM
To: Jackson, Scott [Jackson.Scott@epa.gov]; Engels, Alan [engels.alan@epa.gov]; Fallon, Gail [fallon.gail@epa.gov]
CC: Russ, Timothy [Russ.Tim@epa.gov]
Subject: RE: Suspense: Dec 21, 2020 - Important, reply requested Freedom of Information Act request EPA-2021-000565

Yes, Tim Russ would be the point of contact for this. Please note, he is on leave until Dec. 23. I have cc'd him here. Thanks, Kerri

Kerri Fiedler
 Air Toxics, Radiation & Modeling Branch Chief (8ARD-TRM)
 EPA Region 8
 1595 Wynkoop St.
 Denver, CO 80202
 Phone: (303) 312-6493
fiedler.kerri@epa.gov

From: Jackson, Scott <Jackson.Scott@epa.gov>
Sent: Wednesday, December 16, 2020 10:09 AM
To: Engels, Alan <engels.alan@epa.gov>; Fallon, Gail <fallon.gail@epa.gov>; Fiedler, Kerri <Fiedler.Kerri@epa.gov>
Subject: RE: Suspense: Dec 21, 2020 - Important, reply requested Freedom of Information Act request EPA-2021-000565

Alan,

I'm looping in Kerri Fiedler who has a staff person (Tim Russ) who would know the most about this subject. I'll let her confirm that though. Tim may also know names of others in ARD that might have responsive records.

Scott

From: Engels, Alan <engels.alan@epa.gov>
Sent: Wednesday, December 16, 2020 9:02 AM
To: Fallon, Gail <fallon.gail@epa.gov>; Jackson, Scott <Jackson.Scott@epa.gov>
Subject: Suspense: Dec 21, 2020 - Important, reply requested Freedom of Information Act request EPA-2021-000565

Gail / Scott:

We received this multi-regional request.

Can you please check to see who might be involved in the conversation. It looks like the question which include Region 8 location is Items 1 on the attachment.

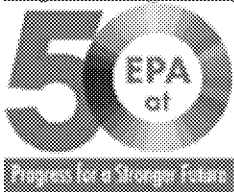
1. All records pertaining to EPA's approval or disapproval of vehicle anti-tampering provisions of any State Implementation Plan submitted pursuant to 42 U.S.C. § 7410 ("SIP") by Illinois, Montana, New Hampshire, Ohio, Texas, and Utah. See 40 CFR Part 50 Subparts O, BB, KK, SS, & TT. Examples of the current version of these states' anti-tampering provisions are included in the following footnote for reference.⁴

We will be working on this request as a multi-regional response that requires us to provide the names of anyone in the region that might have responsive documents or emails. The documents would then be collected into a single Relativity workspace with each office having responsibility to review documents for their offices.

We would appreciate either the names of individuals within the region that might have responsive documents or pointing us to someone you think might be able to provide us with those names. If there is no one in the region that has been involved in this conversation, please let us know, so that we can relay that information to the lead FOIA office.

Alan Engels
Regional FOIA Officer
US EPA, Region 8
1595 Wynkoop St.
8ORC-LCG
Denver, CO 80202

(303) 312-6306
Engels.alan@EPA.gov



From: Meekins, Tanya <Meekins.Tanya@epa.gov>

Sent: Monday, December 14, 2020 2:02 PM

To: Flores, Priscilla (Feliciano) <Flores.Priscilla@epa.gov>; Knapp, Michael <Knapp.Michael@epa.gov>; Lao, Judy <Lao.Judy@epa.gov>; Schena, Cristeen <Schena.Cristeen@epa.gov>; Smart, Mark <smart.mark@epa.gov>; Calderon, Wanda <Calderon.Wanda@epa.gov>; Cohen, Mitchell <cohen.mitchell@epa.gov>; Ferrara, Helen <Ferrara.Helen@epa.gov>; Ferreras-DeJesus, Jacqueline <Ferreras-DeJesus.Jacqueline@epa.gov>; Gonzalez, EduardoJ <Gonzalez.EduardoJ@epa.gov>; Bigioni, Neil <bigioni.neil@epa.gov>; Bostic, Donna <Bostic.Donna@epa.gov>; Dru, Jacobine <Dru.Jacobine@epa.gov>; Bradley, Megan <Bradley.Megan@epa.gov>; Frankel, Michael <frankel.michael@epa.gov>; Graff, Jeannine <Graff.Jeannine@epa.gov>; Armstrong, Kathy <Armstrong.Kathy@epa.gov>; Hines, Andrea <hines.andrea@epa.gov>; Cody, Karen <Cody.Karen@epa.gov>; Cruver, Melvin <Cruver.Melvin@epa.gov>; Daniels-Lewis, Alicia <Daniels-Lewis.Alicia@epa.gov>; Johnson, Priscilla <Johnson.Priscilla@epa.gov>; Brady, Wanda <brady.wanda@epa.gov>; Callahan, Adrienne <callahan.adrienne@epa.gov>; Gupta, Kaushal <Gupta.Kaushal@epa.gov>; Klassman, Debra <klassman.debra@epa.gov>; Lupton, Jane <lupton.jane@epa.gov>; Bradford, Deanna <Bradford.Deanna@epa.gov>; Donaldson, Yerusha <donaldson.yerusha@epa.gov>; Ford, Mark <Ford.Mark@epa.gov>; Hill, Latasha <Hill.Latasha@epa.gov>; Langley, Shirley <Langley.Shirley@epa.gov>; Murdock, James <Murdock.James@epa.gov>; Chen, Alexander <Chen.Alex@epa.gov>; Drennen, Michele <Drennen.Michele@epa.gov>; Stevens, Edie <Stevens.Edie@epa.gov>; Stoy, Alyse <Stoy.Alyse@epa.gov>; Aldinger, Dayle <Aldinger.Dayle@epa.gov>; Boydston, Michael <Boydston.Michael@epa.gov>; Engels, Alan <engels.alan@epa.gov>; Joffe, Brian <joffe.Brian@epa.gov>; Risko, Dianna <Risko.Dianna@epa.gov>; Johnson, Ivry <Johnson.Ivry@epa.gov>; Armsey, Steven <Armsey.Steven@epa.gov>; Busterud, Gretchen <Busterud.Gretchen@epa.gov>; Campbell, Rich <Campbell.Rich@epa.gov>; Dreyfus, Bethany <Dreyfus.Bethany@epa.gov>; Henderson, Alita <Henderson.Alita@epa.gov>; Castanon, Lisa <Castanon.Lisa@epa.gov>; Connery, Shannon <Connery.Shannon@epa.gov>; Dugan, Brett <Dugan.Brett@epa.gov>; Edgell, Joe <Edgell.Joe@epa.gov>; Noel, Jan <Noel.Jan@epa.gov>; Warren, Aumbirh <Warren.Aumbirh@epa.gov>; Belser, Evan <Belser.Evan@epa.gov>; Iddings, Brianna <Iddings.Brianna@epa.gov>; Kaul, Meetu <Kaul.Meetu@epa.gov>; Barnes, Cassandra <Barnes.Cassandra@epa.gov>; Newman, Maya <Newman.Maya@epa.gov>; Bermes, Peter <Bermes.Peter@epa.gov>

Subject: Important, reply requested Freedom of Information Act request EPA-2021-000565

Hello Regional colleagues, OECA, and OGC colleagues:

I am the FOIA coordinator for the Office of Transportation and Air Quality (OTAQ) here in HQs.

You are receiving this email because your office/region may potentially have responsive records to the attached FOIA request.

The requester is Mr. Michael Steinberg from the lawfirm Sullivan and Cromwell. He is seeking records on issues related to SIPs, MOVES, and the Volkswagen's enforcement case.

There are 16 bullet points outlined in the request.

Based on our initial read, the following offices would most likely have records in response to specific items:

- Q1 (Regions 1, 5, 6, & 8)
- Q2 (Region 6)
- Q3 (all Regions)
- Q4-10 (OTAQ lead and possible OECA & OGC custodians)
- Q11-16 (OECA lead and possible OGC & OTAQ custodians)

What I am initially seeking is an answer to the following 2 questions:

- Would your office potentially have responsive records?
- Would the search of records require an email search?

Please provide your response by COB Monday, December 21st and let me know who should be the primary point of contact for future discussions.

Once I have this initial feedback, I will follow up on next steps.

Thank you.

Tanya Meekins
FOIA Coordinator
Office of Transportation
and Air Quality

Message

From: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
Sent: 2/1/2019 4:45:01 PM
To: Froman, Sarah [Froman.Sarah@epa.gov]
CC: Russ, Timothy [Russ.Tim@epa.gov]; Lohrke, Gregory [lohrke.gregory@epa.gov]; Olson, Kyle [Olson.Kyle@epa.gov]
Subject: FW: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs in Salt Lake City, UT
Attachments: Chicago-MPO_Use_of_CMAQ_Funds_6_20_18df.pdf; Utah_VW_Settlement_Funds_Final_Mitigation_Plan_June-2018.pdf

Hi Sarah,

I wanted to let you know that Region 8 has reached out to the Utah Division of Air Quality (UDAQ), regarding potential options for funding of Auxiliary Power Units (APU) for use on railyard switch locomotives in Salt lake City. The below email to Joe Thomas (UDAQ) from me was to facilitate further discussions and, in part, to meet the below highlighted FY19 initiative.

We elected to contact the UDAQ first as they have had past conversations with the Union Pacific (UP) railroad company regarding railyard switch locomotives. We also considered this appropriate as the UDAQ has past experience with assisting the Utah State Legislature in considering an APU switch locomotive project (ref. HB211-2018). We are not aware of any contact between UP and the Salt Lake Metropolitan Planning Organization (MPO) which is the Wasatch Front Regional Council (WFRC). Once we hear back from the UDAQ, and assuming they are fine with sharing this information with WFRC, we'll then reach out to the WFRC. Should both the UDAQ and WFRC be interested in potentially using some of the WFRC's FHWA-allocated CMAQ funds towards an APU retrofit project with UP, we'll then also bring FHWA-UT into the discussion.

Please let me know if you have any questions.

Sincerely,

Kerri Fiedler
 Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)
 EPA Region 8
 1595 Wynkoop St.
 Denver, CO 80202
 Phone: (303) 312-6493
fiedler.kerri@epa.gov

Region 8 Ports Initiative Plans for FY19

Technical Resources – Providing Tools to Help Identify Smart Infrastructure Investments

Communications – Creating a Knowledge Clearinghouse

- Finalize Emission Inventory Study for a railyard, with switcher locomotives and potential APUs, located in north Denver in cooperation with OTAQ.

Funding – Helping Ports Capitalize on Funding for Clean Technologies

- Inform Salt Lake City MPO about eligibility of rail projects under CMAQ; connect them with Chicago MPO/IL FHWA.

Collaboration – Promoting Port-Community Collaboration for Effective Planning

- Participate in regional EJ meetings and assist with any near-railyard community needs related to air quality.

From: Fiedler, Kerri

Sent: Wednesday, January 30, 2019 12:51 PM

To: joethomas@utah.gov

Cc: Russ, Timothy <Russ.Tim@epa.gov>; Olson, Kyle <Olson.Kyle@epa.gov>; Lohrke, Gregory <lohrke.gregory@epa.gov>

Subject: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs: DRAFT Email to UDAQ - Reviewed and Ready to Send with Attachments

Hi Joe, it has been a long time since I last spoke with you. I wanted to let you know I returned to the Air Program about a year ago and look forward to working with you and your staff again. I hope you are doing well.

Back in the February/March time frame of 2018, you had a discussion with Tim Russ of my staff regarding the Utah Division of Air Quality's (UDAQ) efforts to work with the Union Pacific (UP) railroad company to consider retrofit Auxiliary Power Units (APU) for several switch engine diesel locomotives used by UP at their Salt Lake City railyard. The primary objective was to use the APUs in lieu of idling the switch locomotive's main diesel engine and thereby reduce emissions from the switch locomotives during periods of prolonged idling.

Additionally, we were aware of the efforts of one of the Utah State Legislators to secure State funding for this APU retrofit project for the UP switch locomotives. This 2018 Legislative session effort involved HB211 which our understanding was to provide approximately \$2 million towards the APU retrofit effort. However, HB211 did not pass and it appeared that part of the other Legislators' concerns was that UP had sufficient financial resources to purchase, install, and operate the APUs without State funding.

We believe the proposed APU project itself continues to have merit especially for reducing diesel engine exhaust emissions of nitrogen oxides (NOx) and volatile organic compounds (VOC). Reductions of NOx and VOC emissions would be beneficial as they are documented by UDAQ as precursors for the formation of PM_{2.5} in the Salt Lake 2006 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) "Serious" nonattainment area (NAA). Further, reductions of NOx and VOC emissions would also help reduce ground level ozone concentrations which the Salt Lake area is also designated as NAA for the 2015 8-hour ozone NAAQS. Finally, reductions in diesel emissions would also lead to reductions in air toxics emissions which are a component of diesel engine exhaust.

With the above in mind, we would like to offer the below information regarding additional potential funding mechanisms for your consideration. We note the below described potential funding mechanisms would only cover a portion of the APU capital cost/installation; there would be a requirement for a portion of each APU project to be co-funded by UP. Also, once installed on a UP switch locomotive, UP would then have to bear the operation and maintenance costs of each APU. However, in exchange UP may possibly be viewed as a "good neighbor" for communities adjacent to the UP Salt Lake City railyard. In addition, positive aspects of using the APUs would be for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area. Finally, there would likely be an economic fuel savings/maintenance cost benefit for UP when operating the APU rather than the switch locomotive's main diesel engine.

Potential Funding Mechanisms:

1.) Diesel Emissions Reduction Act (DERA) <https://www.epa.gov/cleandiesel/>: This would certainly be one well-established method for funding a switch engine diesel locomotive project to install APUs to reduce idling. There is also an option under DERA for using VW settlement funds to reduce NOx emissions. See: <https://www.epa.gov/cleandiesel/volkswagen-vw-settlement-dera-option>.

2.) VW Settlement Funds: We note the that the Utah VW Settlement final plan did include an entry for possibly using some the State's VW Settlement funds towards switch engine locomotive emission reductions (a copy of Utah's final VW

Settlement Plan is attached). However, the entry for switch engines did not receive any funding. We would suggest that perhaps a re-evaluation of the switch engines for funding under the VW Settlement plan may be worth considering.

3.) Congestion Mitigation Air Quality (CMAQ) Funds: Traditionally, CMAQ funds made available from FHWA are used for highway congestion mitigation projects and transportation infrastructure projects in nonattainment and maintenance areas (see: https://www.fhwa.dot.gov/Environment/air_quality/cmaq/reference/cmaq_essentials/). We were made aware by our Office of Transportation and Air Quality (OTAQ) that FHWA has approved the Chicago Metropolitan Planning Organization's (MPO) use of CMAQ funds for both APU and replacement of switch engine diesel locomotives (please see the attached *.pdf file.) Should UDAQ and the Wasatch Front Regional Council (WFRC) desire to consider this approach for funding, in part, the APUs for the UP switch engine diesel locomotives, we recommend additional consultation with FHWA-UT and UDOT.

If you have specific questions on the application of this particular funding mechanism in Chicago, please consider contacting the Chicago MPO and FHWA-IL at:

Doug Ferguson
Chicago Metropolitan Agency for Planning
dferguson@cmap.illinois.gov
(312) 386-8824

John Donovan
Federal Highway Administration
Illinois Division
JOHN.DONOVAN@DOT.GOV
(312) 353-4048

4.) Economic Incentive for Union Pacific: If the above suggested funding mechanisms are considered, but not potentially viable for the UDAQ perhaps an approach can be made to UP to consider the economic aspects of installing APUs on their switch engine locomotives. In short, the APUs would give a quick return on investment through diesel fuel savings (rather than idling the locomotive's main diesel engine) and a reduction in the operation/maintenance costs associated with idling the main diesel engine. As noted above, and in addition to economic benefits, UP would also be viewed as a "good neighbor" for communities adjacent to the UP Salt Lake City railyard and for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area.

To assist UDAQ, the EPA can also provide APU cost benefit information from our review/evaluation of an APU retrofit project on Montana Rail Link (MRL) locomotives (both switcher and road locomotives). In addition, we can provide emissions calculating tools from the EPA and as developed by the Colorado Department of Public Health and Environment for APU projects. Finally, the EPA would also be available to assist the UDAQ with discussions of such APU projects with UP.

We look forward to continuing our discussions with you on these APU projects. Please let me know if you have any questions.

Sincerely,

Kerri Fiedler
 Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)
 EPA Region 8
 1595 Wynkoop St.
 Denver, CO 80202
 Phone: (303) 312-6493
fiedler.kerri@epa.gov

Utah Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust



UTAH DEPARTMENT *of*
ENVIRONMENTAL
QUALITY

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Background

In 2015, the United States (U.S.) Environmental Protection Agency (EPA) issued two notices of violation of the Clean Air Act (CAA) to Volkswagen Group¹ (Volkswagen or VW), the German automotive manufacturer. The EPA asserted that VW installed software that activated emissions controls only while undergoing emissions testing, but rendered certain emissions controls inoperative during normal driving conditions. Consequently, approximately 500,000 2.0-liter diesel vehicles (models 2009 to 2015) and 90,000 3.0-liter diesel vehicles (models 2009-2016) sold across the U.S. emitted between 9 and 40 times the nitrogen oxides (NO_x) emissions allowed by federal law².

On January 4, 2016, the United States Department of Justice filed a civil suit against VW for CAA violations seeking to permanently prevent VW from selling non-compliant vehicles, to permanently prevent VW from installing the offending software in vehicles, to mitigate the excess NO_x emissions, and to impose monetary penalties for the CAA violations³. Through two partial settlements⁴, VW is required to pay \$15.7 billion, divided into three components:

- \$10.8 billion for the buyback and emission control modifications on a minimum of 85% of the non-compliant vehicles
- \$2 billion to support the increased use of zero-emissions vehicle (ZEV) technology
- \$2.9 billion for an Environmental Mitigation Trust (the Trust)

The State of Utah (State), a beneficiary of the Trust⁵, has been allocated \$35,177,506, which is based on approximately 7,000 non-compliant VW vehicles registered throughout the state⁶:

- 2.0-liter diesel VW vehicles (engine-model years 2009-2015): 5,983 statewide
- 3.0-liter diesel VW, Audi, and Porsche vehicles (engine-model years 2009-2016): 1,030 statewide

As a beneficiary, the State is required to develop this Environmental Mitigation Plan (EMP) to provide the public with a high-level overview of how the State intends to use the Trust funds to mitigate the excess NO_x emissions from the non-compliant vehicles. The settlement specifies eligible mitigation action (EMA) categories the State may select to achieve its NO_x-reduction goals. The categories include

¹ The Volkswagen Group collectively includes Volkswagen AG, Audi AG, Volkswagen Group of America, Inc., Porsche AG, and Porsche Cars North America, Inc. Notice of Violation from Phillip A. Brooks, EPA Air Enforcement Division to David Geanakopulos and Stuart Johnson, Volkswagen Group of America, Inc. (September 18, 2015); Notice of Violation from Susan Shinkman, EPA Office of Civil Enforcement to David Geanakopulos and Stuart Johnson, Volkswagen Group of America, Inc. and Joseph Folz and Walter J. Lewis, Porsche Cars North America, Inc. (November 2, 2015).

² EPA - Frequent Questions about Volkswagen Violations: <https://www.epa.gov/vw/frequent-questions-about-volkswagen-violations>.

³ *Complaint* at 26-28, U.S.A. v. Volkswagen AG et al, (E.D. Mich. 2016).

⁴ The third partial settlement addressed \$1.45 billion in penalties to settle the civil claims of EPA and the U.S. Customs and Border Protection and injunctive relief for VW. *Third Partial Consent Decree*, Case No. MDL 2672 CRB (JSC) (April 13, 2017). VW also entered a plea agreement to pay a criminal fine of \$2.8 billion related to installing the emission software. *Plea Agreement*, U.S.A. v. Volkswagen AG, (E.D. Michigan 2017).

⁵ See *Notice of Beneficiary Designation Under the Volkswagen Diesel Emissions Environmental Mitigation Trust for State Beneficiaries, Puerto Rico, and the District of Columbia*, Case No. MDL 2672 CRB (JSC) (January 29, 2018).

⁶ *Partial Consent Decree*: <https://www.epa.gov/sites/production/files/2016-10/documents/amended201partial-cd.pdf>.

vehicle and engine replacement or repower projects from certain on-road vehicles and non-road equipment, as well as projects that expand light-duty, electric-vehicle infrastructure.

Gary R. Herbert, Governor of the State of Utah, has designated the Utah Department of Environmental Quality (UDEQ) as the lead agency to administer Utah's portion of the Trust funds. UDEQ is the agency with jurisdiction over regulation of air quality for the state and is responsible for monitoring and enforcing regulations pertaining to the CAA. UDEQ views the availability of Trust funds as a unique opportunity to reduce NO_x and other pollutants through a means other than existing regulatory parameters. As such, UDEQ has completed a careful assessment of the EMA categories to determine which ones will provide the greatest benefit to the state⁷.

NO_x Emissions and Utah's Air Quality

NO_x emissions have a significant impact on Utah's air quality. Nitrogen oxides are highly reactive gases that are toxic on their own and also react with other pollutants to form ozone and particulate matter (PM). Ozone and fine PM (PM_{2.5}) are the primary air quality concerns in the state. NO_x emissions result from fuel combustion at high temperatures, making on-road vehicles and non-road equipment the largest NO_x contributors in the most populous areas of the state⁸. Combined with unique topography, geography, and meteorology, NO_x emissions are conducive to areas of the state exceeding the National Ambient Air Quality Standards (NAAQS) set by EPA for 24-hour PM_{2.5} and ozone. During the winter months, Utah experiences about five to six multi-day inversion episodes during which air quality monitors report exceedances of the 24-hour PM_{2.5} NAAQS. Similarly, in the summer months, these areas of the state experience high levels of ozone that exceed the NAAQS. In fact, during the summer of 2017, the State experienced more exceedances of the federal ozone standard than in any of the last ten years.

PM_{2.5} can lodge deep in the lungs and infiltrate the bloodstream and negatively affect both the heart and lungs. Complications from exposure to PM_{2.5} include irritated airways, coughing, difficulty breathing, aggravated asthma, decreased lung function, irregular heartbeat, nonfatal heart attacks, and even premature death in people with heart or lung disease⁹.

Exceedances of the 24-hour PM_{2.5} standard occur in the winter months when temperature inversions occur. The Wasatch Mountains, Oquirrh Mountains, and Traverse Mountains create a bowl that surrounds lowland valleys where Utah's population is concentrated. This unique topography blocks horizontal air movement, causing air masses to stagnate in those population centers where vehicles are abundant. During the cold winter months, temperature inversions develop where a warmer air mass sits on top of a colder air mass. Very little vertical air exchange happens during an inversion and the warm air acts as a lid on top of a bowl, trapping air and pollution. Primary and secondary PM_{2.5} build and cannot dissipate until a strong weather system moves through the lowland valleys. The air stagnation and pollution

⁷ Note the terms of the Trust require UDEQ to only provide the level of detail reasonably ascertainable at the time of submission of this plan. Nothing in this provision is intended to make this Beneficiary Mitigation Plan binding on the State, nor does it create any rights in any person to claim an entitlement of any kind. The State may adjust goals and specific spending plans at its discretion and, it will provide the Trustee and the public with any updates to the Beneficiary Mitigation Plan.

⁸ 2014 Utah Division of Air Quality Emissions Inventory

⁹ EPA – Health and Environmental Effects of Particulate Matter (PM): <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

buildup results in exceedances of the 24-hour $PM_{2.5}$ NAAQS. Consequently, the EPA has classified the Provo and Salt Lake areas as serious nonattainment areas for 24-hour $PM_{2.5}$ and the Logan area as a moderate nonattainment area for $PM_{2.5}$ (see Figure 1).

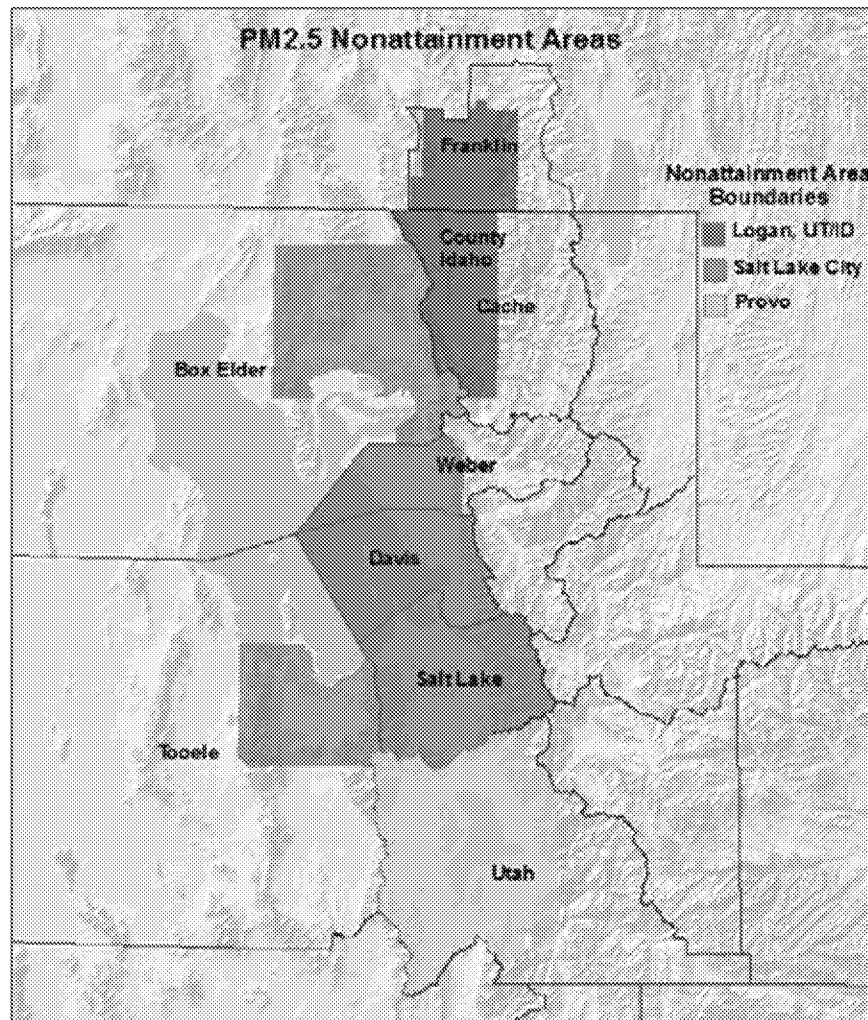


Figure 1: Utah 24-hour $PM_{2.5}$ Nonattainment Areas

While Utah's meteorology and unique natural characteristics are important factors in the buildup of fine particulate in Utah's nonattainment areas, the majority of the $PM_{2.5}$ that builds up during these pollution episodes is formed through complex chemical reactions involving volatile organic compounds (VOCs) and NO_x . Those same VOCs and NO_x also contribute to the formation of ozone, which is a summertime issue along the Wasatch Front when sunlight causes chemical reactions to occur between VOCs and NO_x to produce ozone. Ozone can cause chest pains, breathing difficulties, coughing, aggravated asthma symptoms, and stinging in the eyes or throat. The elderly, young children and those with asthma or other respiratory problems are particularly impacted by ozone¹⁰.

¹⁰ EPA - Basic Information about Ozone: <https://www.epa.gov/ozone-pollution/basic-information-about-ozone#effects>.

On April 30, 2018, EPA Administrator Scott Pruitt signed a final notice designating the Northern and Southern Wasatch Front and the Uinta Basin (Duchesne and Uinta counties) as marginal nonattainment areas for the 2015 8-hour ozone standard.

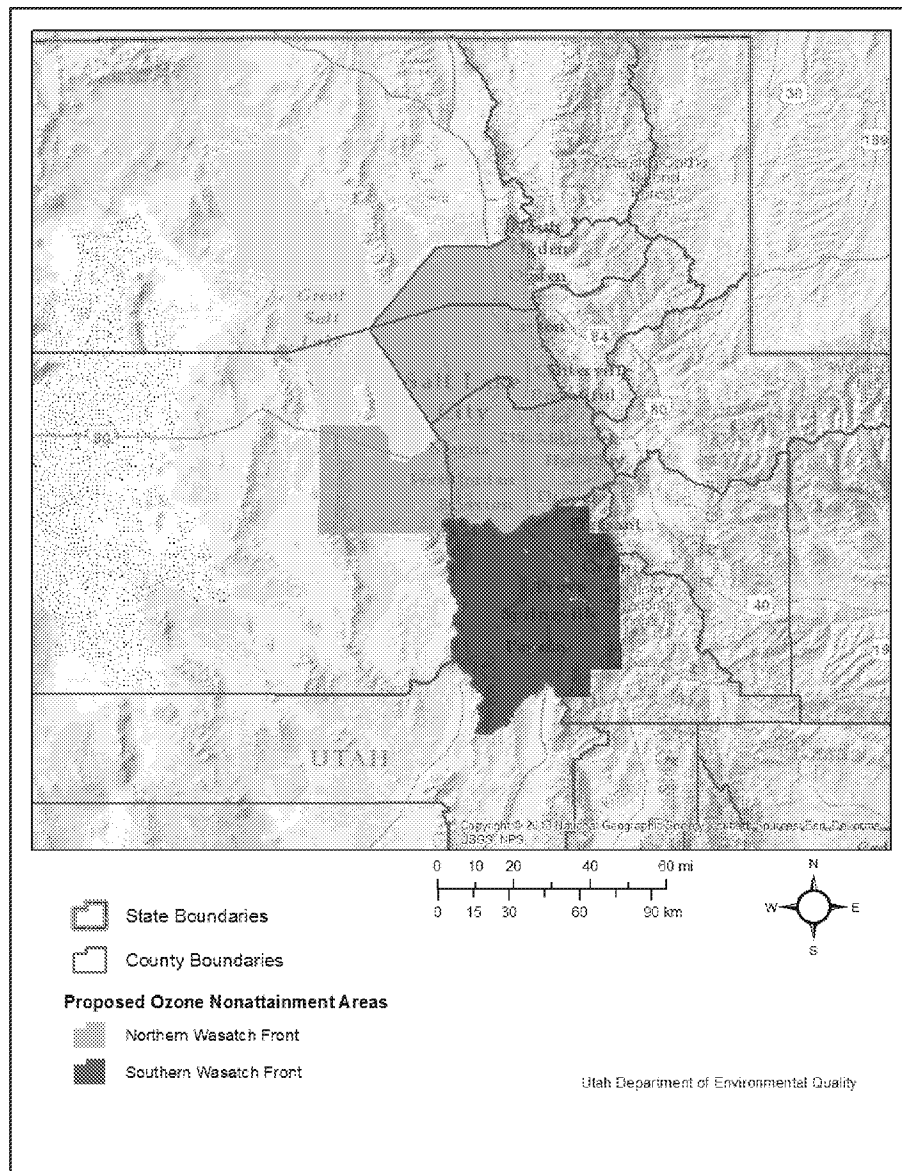


Figure 2: Utah 8-hour Ozone Wasatch Front Nonattainment Areas

The majority of the non-compliant VW vehicles registered in Utah operated in the state's nonattainment areas. Although the EMAs specified in the Trust are intended to mitigate the excess NO_x emissions from these vehicles, some of these projects will result in reductions of other pollutants such as primary PM (tailpipe) and VOCs in the state's nonattainment areas. However, success of the Trust-funded projects in Utah will only be measured in terms of NO_x reductions.

Impact in Areas That Bear a Disproportionate Share of the Air Pollution Burden

The 2014 emissions inventory for Utah shows that 53 percent of the NO_x emissions in the 24-hour PM_{2.5} nonattainment areas are from on-road mobile sources (see Figure 3), which include light- and heavy-duty gasoline vehicles and light-, medium-, and heavy-duty diesel vehicles.

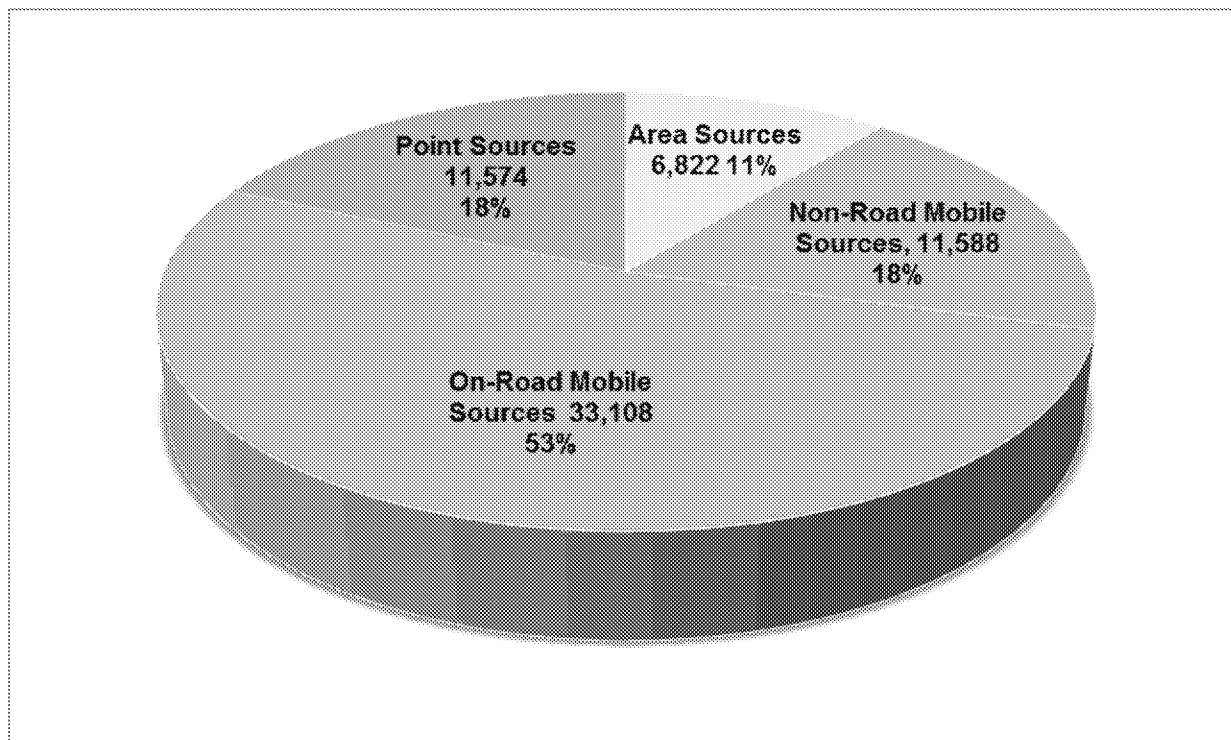


Figure 3: 2014 Emissions Inventory NO_x Sources (TPY) in PM_{2.5} Nonattainment Counties

Medium- and heavy-duty diesel vehicles are the largest mobile source contributors of NO_x emissions in the nonattainment areas, representing half of the on-road mobile sources category (see Figure 4). The Trust identifies the replacement or repower of these vehicles as an EMA, which presents an opportunity for implementing voluntary emissions reductions from a source that is not regulated at the state level.

Medium- and heavy-duty diesel vehicles are the primary mode of freight movement in Utah. In fact, considering the state's relatively modest population of just over three million, Utah handles a disproportionate amount of freight traffic when compared to total traffic of all 50 states, having the highest percentage of freight trucks nationwide¹¹.

¹¹ Utah Department of Transportation, Utah Freight Plan 2017:
<http://www.udot.utah.gov/main/uconowner.gf?n=23980801691013244>

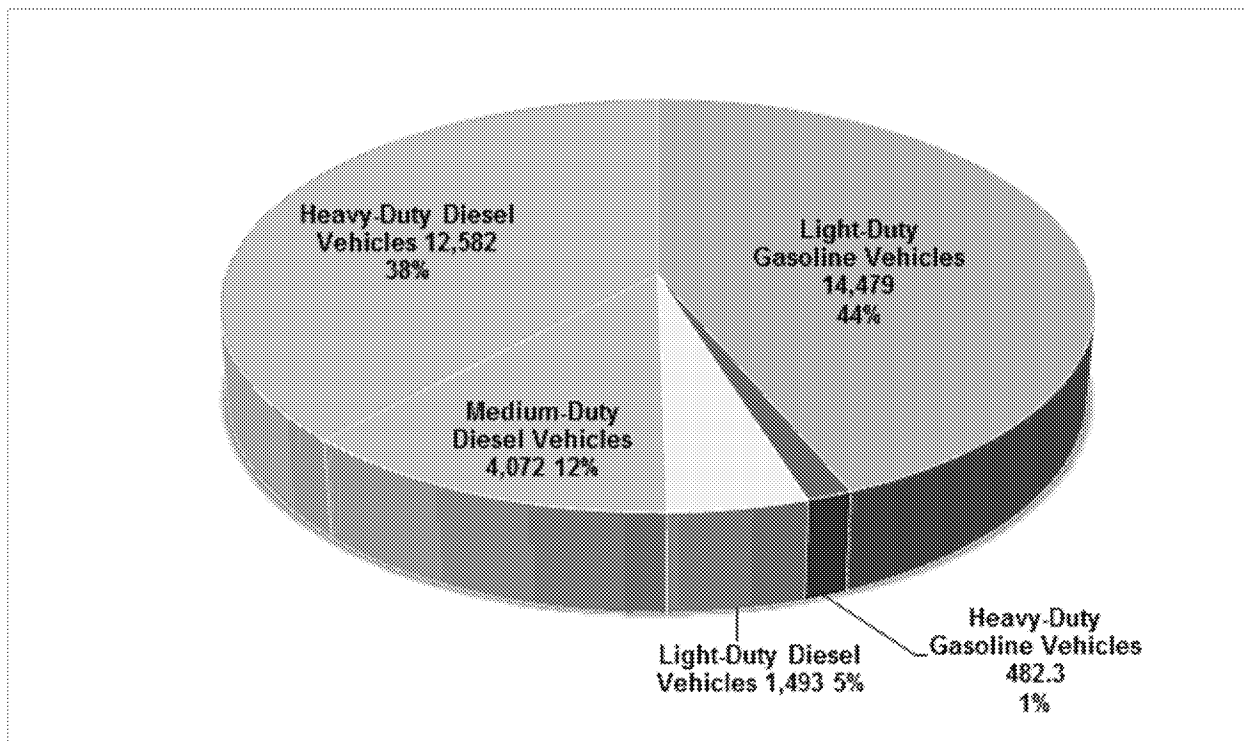


Figure 4: 2014 Emissions Inventory Mobile NO_x Sources (TPY) in PM_{2.5} Nonattainment Counties

As the “Crossroads of the West” for freight traffic, Utah provides a life-line to critical transportation arteries for freight distribution coast to coast and between Canada and Mexico. Interstates 15, 80, 84, and 70 and other freight routes provide connections to Utah’s central transportation network, which serves as a strategic hub for highway, rail, inter-modal, pipeline and air freight in the Western United States.

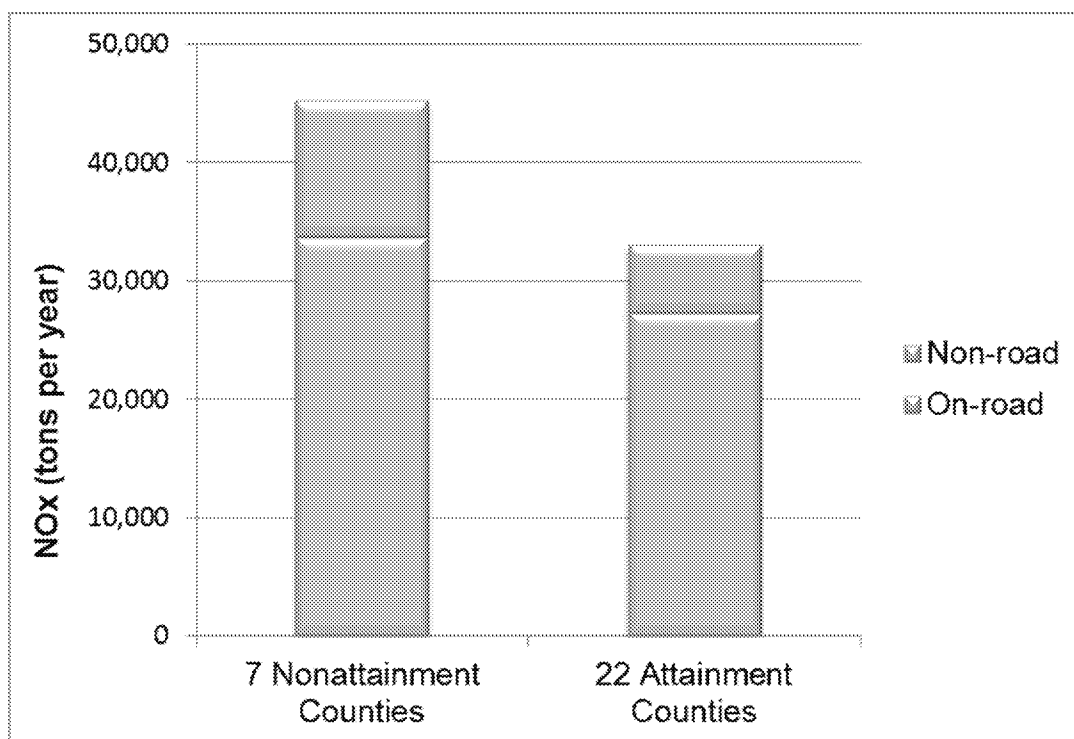


Figure 5: Mobile NO_x Sources in PM_{2.5} Nonattainment vs. Attainment Counties

More than 80% of the state's population live and work in the Salt Lake and Provo PM_{2.5} nonattainment portions of the Wasatch Front where construction projects and major transportation systems are most prevalent. Because the Wasatch Front is only approximately 18 miles wide, most of the land within this area has been developed and has experienced rapid growth from Utah's aggressive economic development trends. The Wasatch Front is a central point for national freight distribution and is home to thousands of warehouses, distribution centers, and terminals for the country's largest trucking companies, carriers, and suppliers, creating a high presence of freight traffic.

North of the Wasatch Front, the Logan PM_{2.5} nonattainment area located in Cache County, has similar topography as the Wasatch Front. The Cache Valley is approximately 4,500 feet above sea level and is almost entirely surrounded with steep mountains reaching over 9,000 feet above sea level, forming a bowl around the valley. During the winter, sub-freezing temperatures, snow-covered ground, and stagnant high-pressure systems result in dense fog formation and temperature inversions over the valley, trapping pollution near the valley floor. The Logan nonattainment area has received national attention for having some of the worst air quality in the country during the inversion season and sees 65,564,200 vehicle miles traveled annually by heavy-duty diesel vehicles¹².

UDEQ will focus efforts in all three nonattainment areas to reduce diesel emissions. As shown in Figure 5, the 24-hour PM_{2.5} nonattainment areas bear a disproportionate share of the air pollution burden when

¹² UDEQ 7-County Heavy-Duty Vehicle Inventory (2016 Annual)

compared to the rest of the state. As such, priority will be given to vehicle/equipment projects that operate in the seven PM_{2.5} nonattainment counties.

Stakeholder and Public Input Process

Advisory Committee

An advisory committee was established to serve in a consultative role to the UDEQ for developing recommendations regarding which EMAs to include in the State's EMP and determine overall goals and criteria for selecting projects. The committee represented key stakeholders, including the Utah Legislature, air quality advocacy groups, local governments, metropolitan planning organizations, the Utah Office of Energy Development, the Utah Department of Health, and the Utah Department of Transportation. After several workshops, the advisory committee reached full consensus on the following recommendation to UDEQ:

Eligible Mitigation Actions	Advisory Committee Recommendations
Class 8 Local Freight Trucks	52%
Class 4-7 Local Freight Trucks	25%
Class 4-8 School, Shuttle, or Transit Bus	7%
Freight Switchers	0%
Airport Ground Support	0%
Forklifts	0%
Light-Duty Zero Emission Vehicle Supply Equipment	11%
Diesel Emission Reduction Act (DERA) Option	0%
Administrative Costs	5%

Table 1: Advisory Committee Funding Recommendations

Public Input Process

Once the advisory committee made their final recommendations, UDEQ opened a 30-day public comment period to allow the public an opportunity to provide input on which EMA categories should be included in the State's plan.

The public input process was offered online at vw.utah.gov, and the website included access to information about the different EMA categories, the impact of NO_x emissions in the state, and the parameters of the VW Settlement. The site also included an interactive calculator providing a general comparison of the estimated NO_x reductions that might result from the eligible projects and how their costs per ton of NO_x emissions reductions might fit into the overall plan. Participants were encouraged to review the advisory committee's recommendations and use the interactive calculator prior to submitting their recommendations and comments.

Results

There were 43 online respondents and 20 comments received by email. Figure 6 shows the percentages of responses by affiliation category.

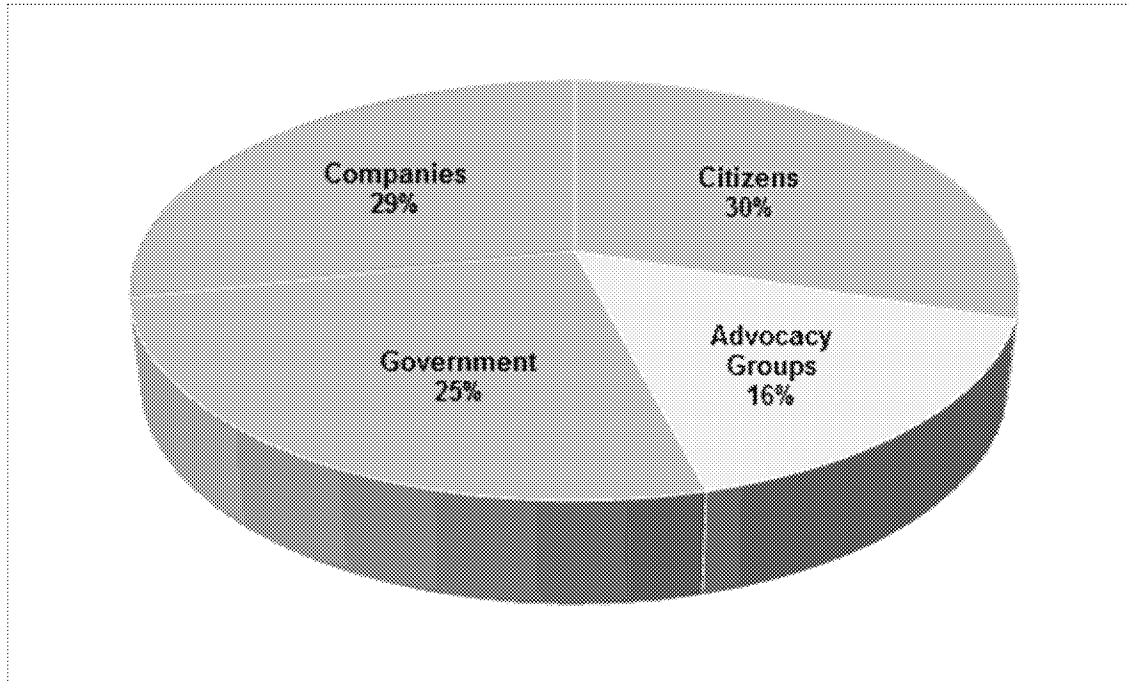


Figure 6: Public Survey Respondents Affiliation Category

Citizen responses varied both geographically and by the nature of the comments. Twenty-nine percent of the responses were from businesses promoting their technologies. Environmental advocacy groups generally commented that the Trust funds should be used to promote electric vehicle (EV) technologies. All government responses were from Cache County and were in favor of public fleet replacements. Approximately 15 responses were in favor of using the full 15% allowed for light-duty, zero-emissions equipment. Eighty-two respondents submitted a form through an advocacy group submitting identical comments. These identical responses were counted as one group response.

Figure 7 shows the results of the public's selection of EMA categories. The top five selected categories were: Class 8 Local Freight Trucks, Class 4-8 Buses, Class 4-7 Local Freight Trucks, Light-Duty, Zero-Emissions-Vehicle Equipment, and projects eligible through the Diesel Emissions Reduction Act (DERA).

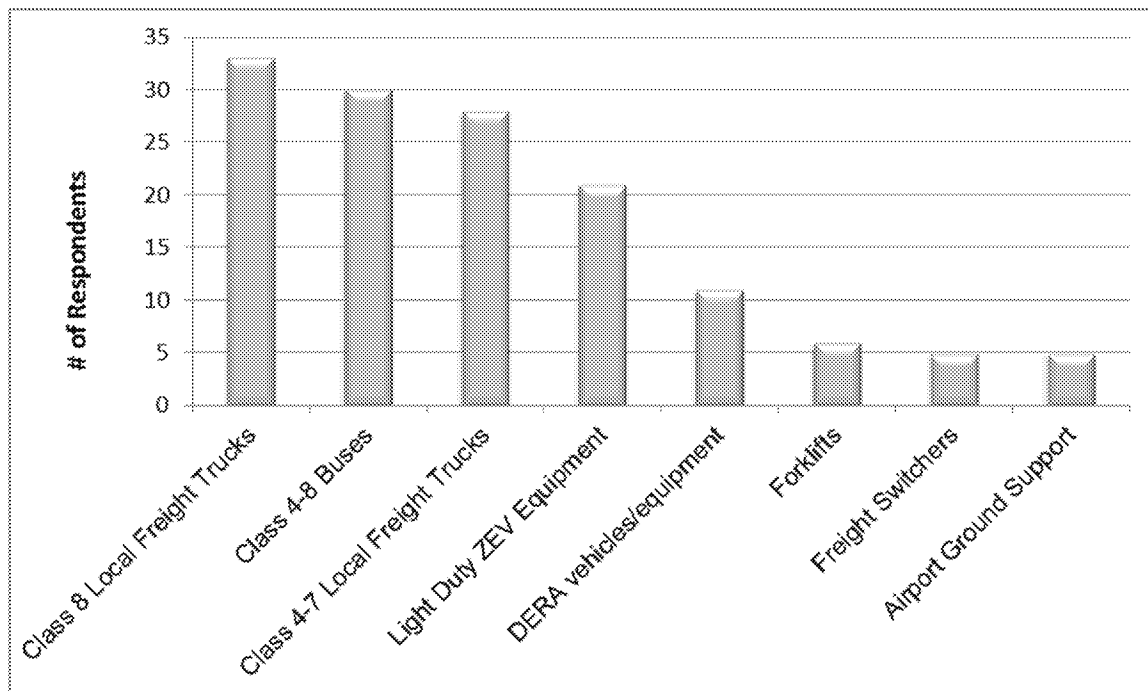


Figure 7: Eligible Mitigation Action Categories Selected by Public Survey Respondents

UDEQ is using the vw.utah.gov website to continue keeping the public informed. Updates on the VW EMP, the process for which to submit potential projects, selection criteria, and general information regarding the VW Settlement will be posted at vw.utah.gov.

Utah's Overall Goals and Priorities

Utah's goals for the Environmental Mitigation Trust are to:

- achieve significant NO_x reductions that work toward fully mitigating the excess lifetime NO_x emissions from the non-compliant VW vehicles and contribute to the State's ongoing goal of reaching attainment of the NAAQS,
- maximize the amount of emissions reductions for each dollar spent (see Figure 8),
- benefit areas in Utah that bear a disproportionate amount of the air pollution burden,
- stimulate emerging vehicle technologies that result in long-term emissions benefits, and
- provide economic and health benefits to the citizens of Utah.

UDEQ will give priority to vehicle/equipment projects that:

- operate a significant amount of time in nonattainment areas,
- have a reasonable number of years remaining in useful life, and
- are well-leveraged.

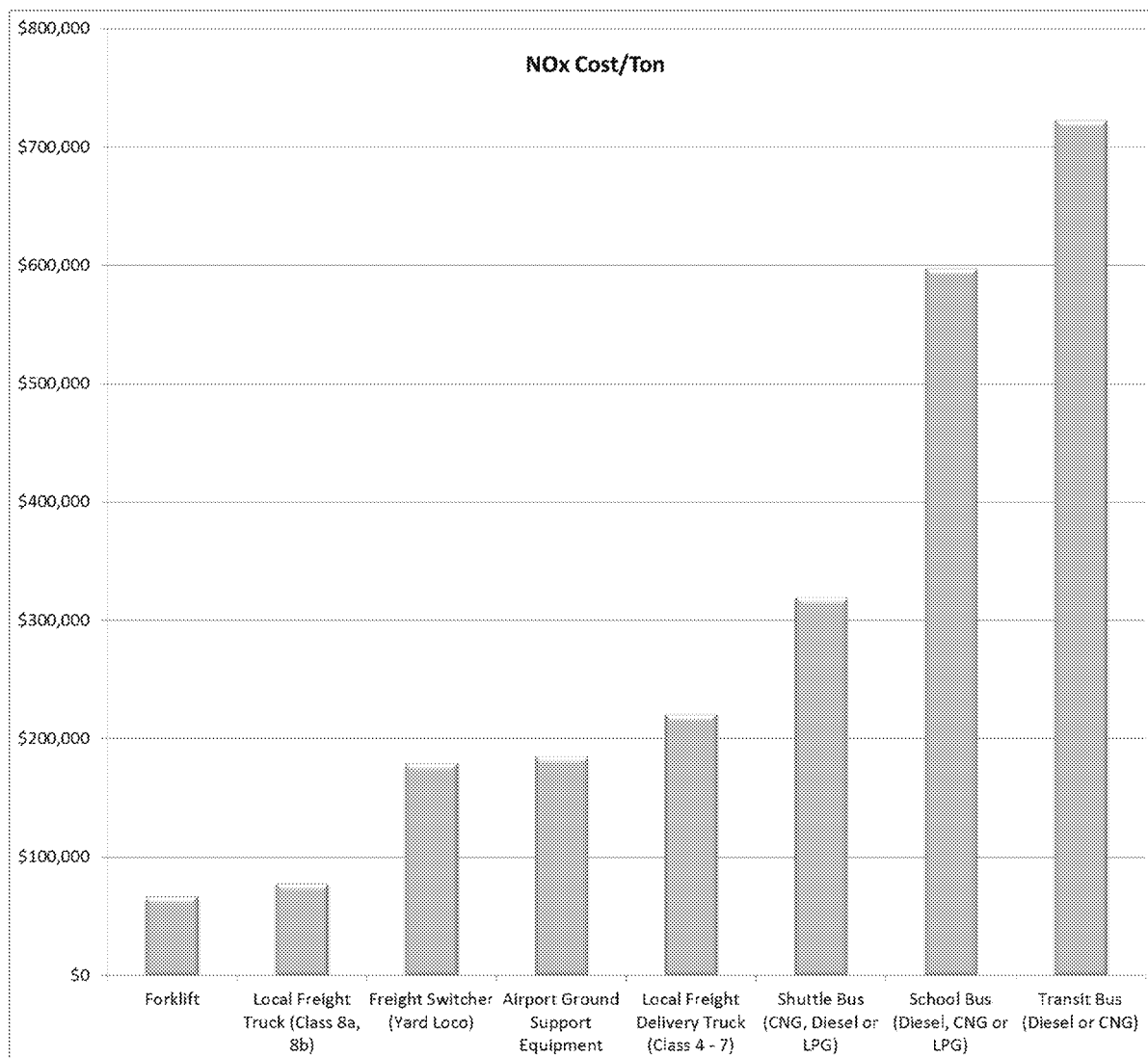


Figure 8: Vehicle/Equipment Replacement Annual Cost/NO_x TPY

To achieve these goals, UDEQ will dedicate the majority of Trust funds for government-owned fleet projects. Government fleet turnover is typically hindered as a result of limited budgets, resulting in older, dirtier vehicles/equipment remaining in operation for extended periods of time. Retiring government-owned vehicles/equipment that are intended to remain in operation for several more years and providing financial incentives to permanently remove them from service sooner will provide air quality benefits, while also profiting tax payers. Further, public fleets operate full-time in their local airsheds, ensuring NO_x reductions will occur in the nonattainment areas where vehicles/equipment are replaced. Although 100 percent funding is eligible for government-owned vehicles, UDEQ will offer up to 50 percent funding for vehicle/equipment replacements and an increased amount for repowers in order to fund additional emissions reductions. An added incentive will be provided for all-electric projects. Private fleet owners will have an opportunity to participate through the DERA category.

The State recognizes the worldwide trends for electric vehicle technologies. Automotive manufacturers, consumer demand, and international market forces are creating a transformative revolution in

transportation. UDEQ received favorable support from the public to direct funding toward electric vehicles. As such, the State will incent the implementation of electric vehicle technology for government-owned fleets and facilities.

Utah's goals for its EMP align with UDEQ's mission to safeguard Utah's air, land, and water through balanced regulation. Aside from the goal of reducing NO_x emissions, there are other economic, health, and technological reasons to consider when determining the best use of this unique funding opportunity. UDEQ will evaluate specific projects weighing these factors in final decisions.

Eligible Mitigation Action Categories Selected for Funding

UDEQ plans to allocate the Trust funds to the EMA categories, with focus on government-owned vehicles and equipment, as outlined in Table 2. UDEQ's selection of funded EMA categories is based on the advisory committee's recommendations, public input, and UDEQ's goals and priorities.

Utah's Selected EMA Categories	
EMA	Funding Percentages
Class 8 Local Freight Trucks	73.5%
Class 4-7 Local Freight Trucks	
Class 4-8 School, Shuttle, or Transit Buses	
Freight Switchers	0%
Airport Ground Support	0%
Forklifts > 8,000 lb. lift capacity (port handling equipment)	0%
Light-Duty Zero Emission Vehicle Supply Equipment	11%
Diesel Emission Reduction Act (DERA) Option	7%
Administrative Costs	8.5%
Total	100%

Table 2: EMA Funding Percentages

Class 4-8 Local Freight Trucks, School Buses, Shuttle Buses, and Transit Buses

As previously demonstrated, medium- (Class 4-6) and heavy-duty (Class 7-8) on-road diesel vehicles combined represent half of the NO_x emissions from on-road mobile sources in Utah's PM_{2.5} nonattainment areas and are in the top five eligible categories for being the most cost-effective for achieving NO_x reductions. As such, Utah will allocate 73.5 percent of the Trust funds towards Class 4-8 local freight trucks and school, shuttle, or transit buses. Combining these categories allows UDEQ to make final funding determinations based on specific vehicle/equipment projects and their ability to achieve the State's goals.

Government-owned diesel vehicles will be replaced or repowered with vehicles or engines that meet the most stringent emissions standards. Replacement vehicle fuel types will be left to the fleet owners; however, added incentives will be given to electric-vehicle technologies. Private fleets will have funding opportunities through the Diesel Emissions Reduction Act (DERA).

DERA Funding

Utah will allocate seven percent of the Trust funds to the Diesel Emissions Reduction Act (DERA) category. Nearly \$18 million in DERA awards from EPA to UDEQ have resulted in the reduction of approximately 8,000 lifetime tons of emissions from medium- and heavy-duty diesel vehicles¹³ since 2008. Projects have included exhaust-control and idle-reduction technologies, on-road and non-road vehicle/equipment replacements, and repowers. Apportioning trust funds to this category allows UDEQ to continue its investment to this program by matching EPA's annual base amounts for years to come in order to receive additional funding incentives of 50% of the base amount.

The DERA category allows the State to use Trust funds for other projects not limited to the EMAs detailed in the Trust. For example, the State can use the DERA option to fund non-road equipment such as construction, agriculture, locomotives, etc., or exhaust controls or EPA-verified idle-reduction technologies. Investing in this category allows the State more flexibility for funding NO_x reduction projects that are relevant to fleet owners in Utah. UDEQ will focus on funding private fleets through this category.

Light-Duty, Zero-Emission Vehicle Supply Equipment

As recommended by the advisory committee and based on support received from the public, the State will allocate 11 percent of the Trust to the Light-Duty, Zero-Emission Vehicle Supply Equipment category. The State plans to install EV charging stations at government-owned facilities within Utah's nonattainment areas to expand the use of EVs in the state and local government fleets. Project prioritization will be based on location related to the nonattainment areas, major transportation corridors, and availability to the public.

According to the State's 2014 On-Road Mobile Sources NO_x Emissions Inventory, light-duty vehicles account for 44 percent of the state's NO_x emissions in the nonattainment areas. Allocating funding to this category allows an opportunity to address NO_x emissions from a category not otherwise eligible through the Trust.

¹³ Calculations derived from EPA's Diesel Emissions Quantifier.

In addition to allocating 11 percent of the Trust funds to EV equipment, significant investments are being made in Utah toward the implementation of EVs. A five-year pilot program to provide \$2 million a year over five years for EV infrastructure expansion throughout the state was approved by the State Legislature to begin in 2017. The State Legislature also passed legislation to expend up to \$200,000 from the Transportation Fund to partner with other entities to expand the availability of infrastructure for emerging vehicle technology. The local utility, PacifiCorp, received a \$4 million grant from the U.S. Department of Energy for EV charging infrastructure and fleet deployment. The goal for the grant is to electrify over 1,500 miles of interstate highways in three states with EV chargers every 50-100 miles along the corridors. Expanding workplace EV charging is another segment of this program. For many years, the State has offered millions of dollars in grants and tax credits to incent the purchase of EVs.

Additionally, through the \$2 billion ZEV Investment included in the VW Settlement, other opportunities exist for funding EV expansion. The governors of Utah, Colorado, and Nevada have collaborated to create an EV charging network across the Western United States that aligns with the Federal Highway Administration's Electric Vehicle Corridor, setting the stage for further funding opportunities.

Administrative Costs

The Trust allows up to 15% of the State's allocation to be used for administrative costs. The UDEQ plans on using 8.5% of the Trust funds for administrative costs to implement the funded EMA projects. UDEQ recognizes that administrative costs must be tied to specific EMAs. UDEQ anticipates the administrative costs associated with the EMAs to include tasks such as establishing a process to solicit, select and submit funding requests for eligible mitigation projects and implementing and providing oversight of authorized projects. Considering the level of oversight required to administer the program effectively, and to ensure the timely availability of information to the public, a significant amount of staff resources will be applied to this long-term project.

Expected Ranges of Emissions Benefits

Total Excess NO_x Emissions in Utah

The objective for the Trust is to fund vehicle/equipment projects that fully mitigate the excess lifetime NO_x emissions from the non-compliant VW vehicles that were registered in the state. This section will describe the excess NO_x emissions from the non-compliant vehicles and the estimated ranges of NO_x emissions benefits the State anticipates from the EMA category selections.

The 5,983 2.0-liter and 1,030 3.0-liter non-compliant vehicles that were registered in the state phased into use between 2009 and 2016. The 2.0-liter partial settlement requires Volkswagen to recall or repair 85% of the 2.0-liter vehicles by June 30, 2019. According to the Claims Supervisor Report published on February 19, 2018, 82% of the 2.0-liter vehicles have been recalled or repaired by that date¹⁴. The 3.0-liter partial settlement had two different 85% recall/repair dates, November 30, 2019, and May 31, 2020¹⁵.

¹⁴ Report of Independent Claims Supervisor on Volkswagen's Progress and Compliance Related to Resolution Agreements Entered October 25, 2016, (April 26, 2018).

¹⁵ *Second Partial Consent Decree*, MDL No. 2672 CRB (JSC) (approved May 17, 2017): <https://www.epa.gov/sites/production/files/2016-12/documents/30literpartialconsentdecree.pdf>.

UDEQ estimates the lifetime NO_x emitted by the non-compliant vehicles to be between 351-1,556 tons of NO_x over the span of time they were operating in Utah. This calculation is based on the phased vehicle deployment, partial settlement recall parameters, the actual rates of recall to date, estimated vehicle miles traveled per year¹⁶, and information from the 2.0-liter partial settlement that states the non-compliant vehicles emitted between 9 and 40 times the EPA standard set for light-duty tier II bin 5 vehicles¹⁷.

Estimated Emissions Benefits

The amount of emissions reductions, including NO_x, PM_{2.5}, VOCs, carbon monoxide, and carbon dioxide from projects selected within the EMA categories are dependent on multiple variables, such as the original vehicle type/usage, engine model year and associated emissions standards, the remaining useful life for the vehicle/equipment being replaced or repowered, and the new engine fuel-type.

When evaluating emissions reductions from a broader perspective than what would be calculated for specific projects, UDEQ estimated the range of emissions reduction using the standards set by EPA. The EPA sets exhaust emissions standards for on-road and non-road vehicles and engines. The latest heavy-duty highway engine standards were revised in 2007¹⁸ and the NO_x standards were phased in between 2007 and 2009. The Trust allows the replacement of vehicles/equipment or repower of engines with engine model years between 1992-2009 with vehicles/equipment or engines that meet the most stringent emissions standards. The allowable NO_x emissions from heavy-duty engines has decreased significantly since 1991 (See Figure 9).

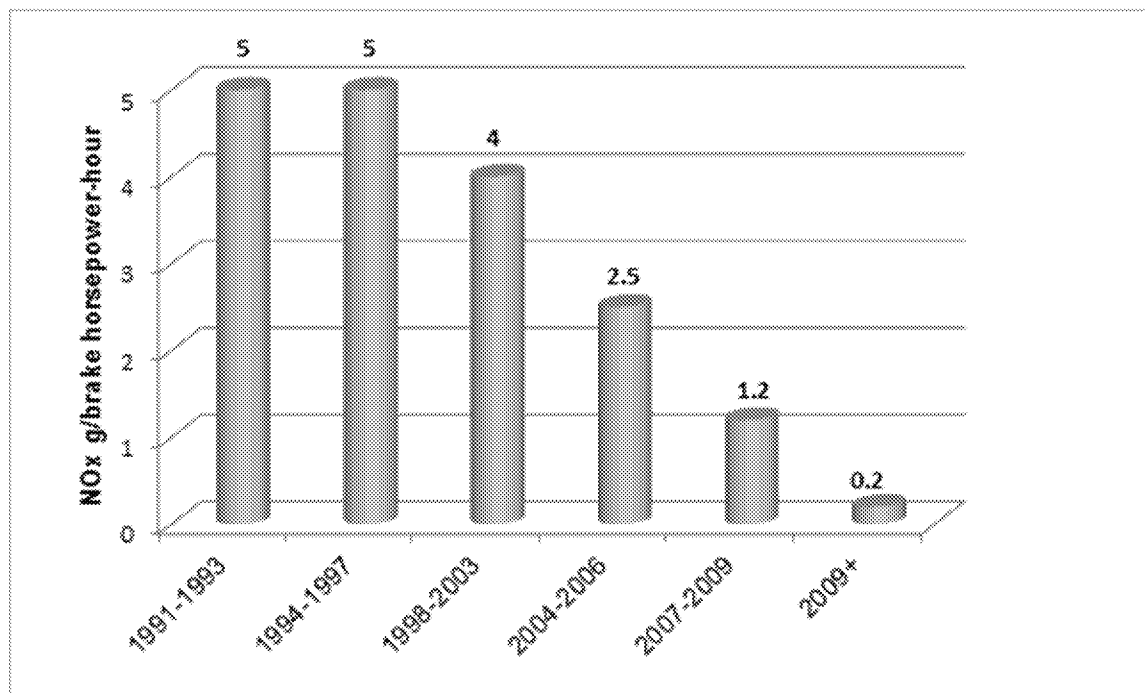


Figure 9: EPA NO_x Emissions Standards

¹⁶ Federal Highway Administration: <https://www.fhwa.dot.gov/policyinformation/statistics/2015/vml.cfm>.

¹⁷ Light-Duty Vehicles, Light-Duty Trucks, and Medium-Duty Passenger Vehicles: Tier 2 Exhaust Emission Standards and Implementation Schedule: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100SMQA.PDF?Dockey=P100SMQA.PDF>.

¹⁸ EPA – Heavy-Duty Highway Compression-Ignition Engines and Urban Buses: Exhaust Emission Standards: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100O9ZZ.pdf>.

Table 3 is an example of diesel-to-diesel annual NO_x reductions in tons per year depending on vehicle type and engine model year emissions standards for the on-road EMA categories selected by the State.

Engine Model Years of Emissions Standard	Class 4-5	Class 6-7	Class 8	Transit Bus	School Bus
1991-1993	.223	.223	.677	1.286	.231
1994-1997	.223	.223	.677	1.286	.231
1998-2003	.11	.11	.466	.829	.116
2004-2006	.093	.093	.214	.437	.087

Table 3: Diesel-to-Diesel Replacement NO_x Reductions (TPY) Per Vehicle Type and Engine Model Year Emissions Standards

When selecting vehicle projects, UDEQ will consider the useful life of the vehicle being replaced. This is an important factor in calculating lifetime emissions reductions since it determines the amount of time the selected vehicles would have remained in operation. Useful life is typically based on vehicle usage, mileage, and fleet retirement schedules. UDEQ will fund vehicles with a minimum of three to four years remaining in useful life in order to ensure emissions reductions are being achieved, rather than supplementing emissions reductions that would have occurred otherwise.

The fuel type of the new vehicle or engine also influences the emissions reduction outcome. UDEQ will consider emissions reductions based on specific projects submitted by fleet owners that will indicate their fuel of choice. UDEQ will use the EPA's Diesel Emission Quantifier tool for calculating emissions reduction for diesel-to-diesel replacement and repowers. The Argonne National Laboratory Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool may be used for calculating emissions reductions for diesel to alternative fuel replacements or repowers. Figure 10 represents how total emissions reductions can be compared and quantified with different fuel types.

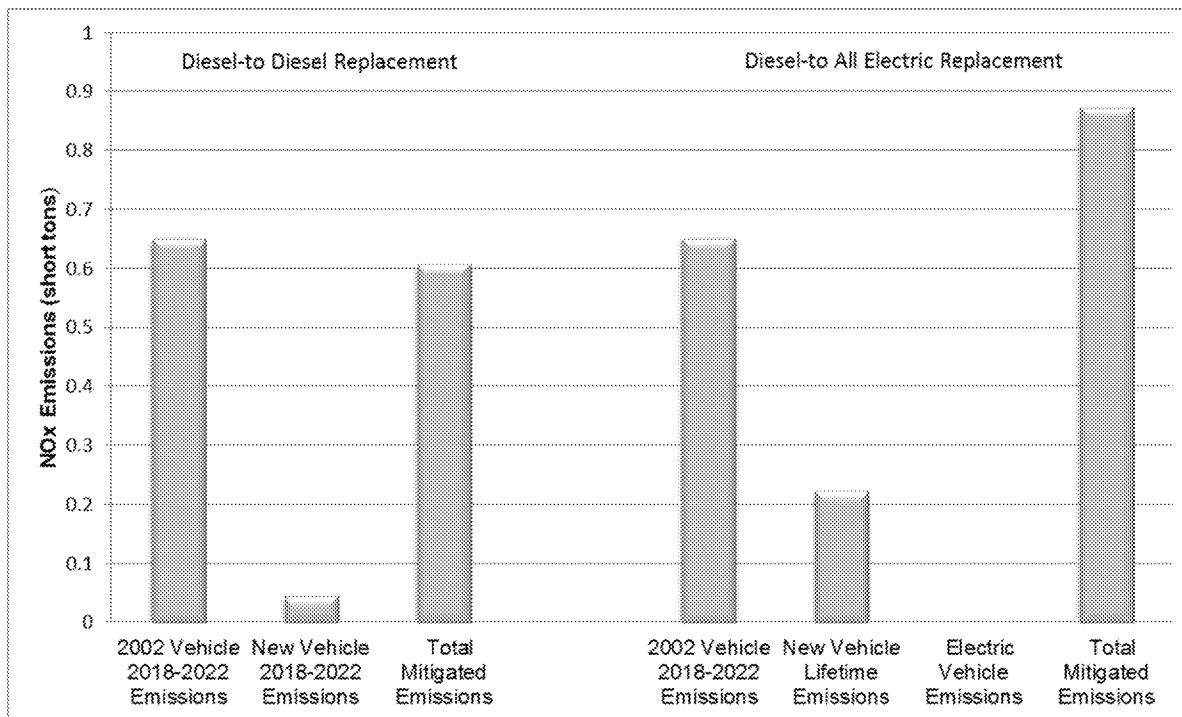


Figure 10: Example of NO_x reductions with different fuel-types from a baseline model year 2002 diesel vehicle with a 20-year retirement schedule, retiring four years early in 2018

Emissions reductions from installing light-duty ZEV supply equipment is based on various factors and hypothetical scenarios, making it challenging to quantify. The immediate NO_x reductions will likely be small. However, as electric vehicles become more common, and the sources for powering EVs relies less on fuel combustion, the long-term overall emissions reductions from installing light-duty ZEV supply equipment are promising.

Statement from Governor Gary Herbert

“Utah’s world-class landscape brings unique air quality challenges that require strategic, evidence-based solutions. The VW Settlement provides an opportunity to put that call into action by removing vehicles that are proven to be significant sources of pollution in our airshed. A well-functioning transportation system is critical to our strong economy, and the emissions reductions that will result from the VW Settlement allow our economy to continue growing while improving our air quality.”

Acronyms and Abbreviations

CAA	Clean Air Act
EMA	Eligible Mitigation Action
EMP	Environmental Mitigation Plan
EPA	Environmental Protection Agency
DERA	Diesel Emission Reduction Act
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
PM _{2.5}	Fine Particulate Matter (diameter of 2.5 micrometers and smaller)
TPY	Tons Per Year
Trust	Environmental Mitigation Trust Agreement for State Beneficiaries
UDEQ	Utah Department of Environmental Quality
Volkswagen or VW	Volkswagen Corporation and Subsidiaries
VOC	Volatile Organic Compound
ZEV	Zero Emissions Vehicle

Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 1/31/2019 10:02:04 PM
To: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
Subject: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs in Salt Lake City, UT
Attachments: Chicago-MPO_Use_of_CMAQ_Funds_6_20_18df.pdf; Utah_VW_Settlement_Funds_Final_Mitigation_Plan_June-2018.pdf

Kerri – below is a DRAFT EMAIL (w/attachments), for your review/edit, to go to Sarah Froman (OTAQ) from you (with cc's to Tim , Greg, and Kyle):

=====

Hi Sarah,

Region 8 wanted to advise OTAQ that we have reached out to our State partner, the Utah Division of Air Quality (UDAQ), regarding potential options for considering the funding of Auxiliary Power Units (APU) for use on railyard switch locomotives in Salt lake City. The below attached email to Joe Thomas (UDAQ) from Region 8 was to facilitate further discussions and, in part, to meet the below highlighted FY19 initiative.

We elected to contact the UDAQ first as they have had past conversations with the Union Pacific (UP) railroad company regarding railyard switch locomotives. We also considered this appropriate as the UDAQ has past experience with assisting the Utah State Legislature in considering an APU switch locomotive project (ref. HB211-2018). Too, we are not aware of any such contact with UP by the Salt Lake Metropolitan Planning Organization (MPO) which is the Wasatch Front Regional Council (WFRC). Once we hear back from the UDAQ, and assuming they are fine with proposing this information be shared with WFRC, we'll then proceed with reaching out to the WFRC. Should both the UDAQ and WFRC be interested in potentially using some of the WFRC's FHWA-allocated CMAQ funds towards an APU retrofit project with UP, we'll then also bring FHWA-UT into the discussion.

Please let me know if you have any questions.

Thank you-

Kerri

Kerri Fiedler
 Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)
 EPA Region 8
 1595 Wynkoop St.
 Denver, CO 80202
 Phone: (303) 312-6493
fiedler.kerri@epa.gov

Region 8 Ports Initiative Plans for FY19

Technical Resources – Providing Tools to Help Identify Smart Infrastructure Investments

Communications – Creating a Knowledge Clearinghouse

- Finalize Emission Inventory Study for a railyard, with switcher locomotives and potential APUs, located in north Denver in cooperation with OTAQ.

Funding – Helping Ports Capitalize on Funding for Clean Technologies

- Inform Salt Lake City MPO about eligibility of rail projects under CMAQ; connect them with Chicago MPO/IL FHWA.

Collaboration – Promoting Port-Community Collaboration for Effective Planning

- Participate in regional EJ meetings and assist with any near-railyard community needs related to air quality.

From: Fiedler, Kerri

Sent: Wednesday, January 30, 2019 12:51 PM

To: joethomas@utah.gov

Cc: Russ, Timothy <Russ.Tim@epa.gov>; Olson, Kyle <Olson.Kyle@epa.gov>; Lohrke, Gregory <lohrke.gregory@epa.gov>

Subject: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs: DRAFT Email to UDAQ - Reviewed and Ready to Send with Attachments

Hi Joe, it has been a long time since I last spoke with you. I wanted to let you know I returned to the Air Program about a year ago and look forward to working with you and your staff again. I hope you are doing well.

Back in the February/March time frame of 2018, you had a discussion with Tim Russ of my staff regarding the Utah Division of Air Quality's (UDAQ) efforts to work with the Union Pacific (UP) railroad company to consider retrofit Auxiliary Power Units (APU) for several switch engine diesel locomotives used by UP at their Salt Lake City railyard. The primary objective was to use the APUs in lieu of idling the switch locomotive's main diesel engine and thereby reduce emissions from the switch locomotives during periods of prolonged idling.

Additionally, we were aware of the efforts of one of the Utah State Legislators to secure State funding for this APU retrofit project for the UP switch locomotives. This 2018 Legislative session effort involved HB211 which our understanding was to provide approximately \$2 million towards the APU retrofit effort. However, HB211 did not pass and it appeared that part of the other Legislators' concerns was that UP had sufficient financial resources to purchase, install, and operate the APUs without State funding.

We believe the proposed APU project itself continues to have merit especially for reducing diesel engine exhaust emissions of nitrogen oxides (NOx) and volatile organic compounds (VOC). Reductions of NOx and VOC emissions would be beneficial as they are documented by UDAQ as precursors for the formation of PM_{2.5} in the Salt Lake 2006 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) "Serious" nonattainment area (NAA). Further, reductions of NOx and VOC emissions would also help reduce ground level ozone concentrations which the Salt Lake area is also designated as NAA for the 2015 8-hour ozone NAAQS. Finally, reductions in diesel emissions would also lead to reductions in air toxics emissions which are a component of diesel engine exhaust.

With the above in mind, we would like to offer the below information regarding additional potential funding mechanisms for your consideration. We note the below described potential funding mechanisms would only cover a portion of the APU capital cost/installation; there would be a requirement for a portion of each APU project to be co-funded by UP. Also, once installed on a UP switch locomotive, UP would then have to bear the operation and maintenance costs of each APU. However, in exchange UP may possibly be viewed as a "good neighbor" for communities adjacent to the UP Salt Lake City railyard. In addition, positive aspects of using the APUs would be for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area. Finally, there would likely be an economic fuel savings/maintenance cost benefit for UP when operating the APU rather than the switch locomotive's main diesel engine.

Potential Funding Mechanisms:

1.) Diesel Emissions Reduction Act (DERA) <https://www.epa.gov/cleandiesel>: This would certainly be one well-established method for funding a switch engine diesel locomotive project to install APUs to reduce idling. There is also

an option under DERA for using VW settlement funds to reduce NOx emissions. See:
<https://www.epa.gov/cleandiesel/volkswagen-vw-settlement-dera-option>.

2.) VW Settlement Funds: We note that the Utah VW Settlement final plan did include an entry for possibly using some of the State's VW Settlement funds towards switch engine locomotive emission reductions (a copy of Utah's final VW Settlement Plan is attached). However, the entry for switch engines did not receive any funding. We would suggest that perhaps a re-evaluation of the switch engines for funding under the VW Settlement plan may be worth considering.

3.) Congestion Mitigation Air Quality (CMAQ) Funds: Traditionally, CMAQ funds made available from FHWA are used for highway congestion mitigation projects and transportation infrastructure projects in nonattainment and maintenance areas (see: https://www.fhwa.dot.gov/environment/air_quality/cmaq/reference/cmaq_essentials/). We were made aware by our Office of Transportation and Air Quality (OTAQ) that FHWA has approved the Chicago Metropolitan Planning Organization's (MPO) use of CMAQ funds for both APU and replacement of switch engine diesel locomotives (please see the attached *.pdf file.) Should UDAQ and the Wasatch Front Regional Council (WFRC) desire to consider this approach for funding, in part, the APUs for the UP switch engine diesel locomotives, we recommend additional consultation with FHWA-UT and UDOT.

If you have specific questions on the application of this particular funding mechanism in Chicago, please consider contacting the Chicago MPO and FHWA-IL at:

Doug Ferguson
Chicago Metropolitan Agency for Planning
dferguson@cmap.illinois.gov
(312) 386-8824

John Donovan
Federal Highway Administration
Illinois Division
JOHN.DONOVAN@DOT.GOV
(312) 353-4048

4.) Economic Incentive for Union Pacific: If the above suggested funding mechanisms are considered, but not potentially viable for the UDAQ perhaps an approach can be made to UP to consider the economic aspects of installing APUs on their switch engine locomotives. In short, the APUs would give a quick return on investment through diesel fuel savings (rather than idling the locomotive's main diesel engine) and a reduction in the operation/maintenance costs associated with idling the main diesel engine. As noted above, and in addition to economic benefits, UP would also be viewed as a "good neighbor" for communities adjacent to the UP Salt Lake City railyard and for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area.

To assist UDAQ, the EPA can also provide APU cost benefit information from our review/evaluation of an APU retrofit project on Montana Rail Link (MRL) locomotives (both switcher and road locomotives). In addition, we can provide emissions calculating tools from the EPA and as developed by the Colorado Department of Public Health and Environment for APU projects. Finally, the EPA would also be available to assist the UDAQ with discussions of such APU projects with UP.

We look forward to continuing our discussions with you on these APU projects. Please let me know if you have any questions.

Sincerely,

Kerri Fiedler
 Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)

EPA Region 8
1595 Wynkoop St.
Denver, CO 80202
Phone: (303) 312-6493
fiedler.kerri@epa.gov

Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 1/30/2019 5:43:27 PM
To: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
Subject: FW: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs: DRAFT Email to UDAQ - Reviewed and Ready to Send with Attachments
Attachments: Chicago-MPO_Use_of_CMAQ_Funds_6_20_18df.pdf; Utah_VW_Settlement_Funds_Final_Mitigation_Plan_June-2018.pdf

DRAFT - DRAFT- DRAFT (Ready to send w/attachments)

== == == == == == == == == == ==

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Additionally, we were aware of the efforts of one of the Utah State Legislators to secure State funding for this APU retrofit project for the UP switch locomotives. This 2018 Legislative session effort involved HB211 which our understanding was to provide approximately \$2 million towards the APU retrofit effort. However, HB211 did not pass and it appeared that part of the other Legislators' concerns was that UP had sufficient financial resources to purchase, install, and operate the APUs without State funding.

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With the above in mind, we would like to offer the below information regarding additional potential funding mechanisms for your consideration. We note all the below described potential funding mechanisms would only cover a portion of the APU capital cost/installation; there would be a requirement for a portion of each APU project to be co-funded by UP. Also, once installed on a UP switch locomotive, UP would then have to bear the operation and maintenance costs of each APU. However, in exchange UP may possibly be viewed as a "good neighbor" for communities adjacent to the UP Salt Lake City railyard. Too, positive aspects of using the APUs would be for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area. Additionally, there would likely be an economic fuel savings/maintenance cost benefit for UP when operating the APU rather than the switch locomotive's main diesel engine.

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1.) Diesel Emissions Reduction Act (DERA) <https://www.epa.gov/cleandiesel>: This would certainly be one well-established method for funding a switch engine diesel locomotive project to install APUs to reduce idling.

There is also an option under DERA for using VW settlement funds to reduce NOx emissions. See: <https://www.epa.gov/cleandiesel/volkswagen-vw-settlement-dera-option>.

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We look forward to continuing our discussions with you on these APU projects and please let me know if there are any questions.

Thank you.

Kerri Fiedler

Kerri Fiedler
Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)
EPA Region 8
1595 Wynkoop St.
Denver, CO 80202
Phone: (303) 312-6493
fiedler.kerri@epa.gov

Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 12/17/2018 9:49:29 PM
To: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
CC: Lohrke, Gregory [lohrke.gregory@epa.gov]; Olson, Kyle [Olson.Kyle@epa.gov]
Subject: Potential Use of DERA/CMAQ/VW Funds for Switcher Locomotive APUs: DRAFT Email to UDAQ
Attachments: Chicago-MPO_Use_of_CMAQ_Funds_6_20_18df.pdf; Utah_VW_Settlement_Funds_Final_Mitigation_Plan_June-2018.pdf

Hi Kerri, Greg, and Kyle,

Below, for your review/edit, is a draft potential email to go from Kerri to Joe Thomas UDAQ. The purpose of this email would be to help reestablish a dialogue on this potential APU project with UDAQ and to also meet one of our three FY19 commitments to OTAQ.

Background: *Earlier this year, Tim spoke with Joe Thomas (UDAQ; Emission Inventories Manager) regarding their efforts with providing assistance/data to a State Legislator to foster HB211 for possible State-assisted APU funding for Union Pacific's switch locomotives located at their Salt Lake City railyard. Joe had also provided some operational use information from Union Pacific (all marked as CBI) and a fundamental emissions calculation spreadsheet.*

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Hi Joe,

Back in the February/March time frame of this year, you had a discussion with Tim Russ of my staff regarding the Utah Division of Air Quality's (UDAQ) efforts to work with the Union Pacific (UP) railroad company to consider retrofit Auxiliary Power Units (APU) for several switch engine diesel locomotives used by UP at their Salt Lake City railyard. The primary objective was to use the APUs in lieu of idling the switch locomotive's main diesel engine and thereby reduce emissions from the switch locomotives during periods of prolonged idling.

Additionally, we were aware of the efforts of one of the Utah State Legislators to secure State funding for this APU retrofit project for the UP switch locomotives. This legislative effort involved HB211 which our understanding was to provide approximately \$2 million towards the APU retrofit effort. However, HB211 did not pass and it appeared that part of the other Legislators' concerns was that UP had sufficient financial resources to purchase, install, and operate the APUs without State funding.

We believe the proposed APU project itself continues to have merit especially for reducing diesel engine exhaust emissions of nitrogen oxides (NOx) and volatile organic compounds (VOC). Reductions of NOx and VOC emissions would be beneficial as they are documented by UDAQ as precursors for the formation of PM_{2.5} in the Salt Lake 2006 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) "Serious" nonattainment area (NAA). Further, reductions of NOx and VOC emissions would also help reduce ground level ozone concentrations which the Salt Lake area is also designated as NAA for the 2015 8-hour ozone NAAQS. Finally, reductions in diesel emissions would also lead to reductions in air toxics emissions which are a component of diesel engine exhaust.

With the above in mind, we would like to offer the below information regarding additional potential funding mechanisms for your consideration. We note all the below described potential funding mechanisms would only cover a portion of the APU capital cost/installation; there would be a requirement for a portion of each APU

project to be co-funded by UP. Also, once installed on a UP switch locomotive, UP would then have to bear the operation and maintenance costs of each APU. However, in exchange UP may possibly be viewed as a “good neighbor” for communities adjacent to the UP Salt Lake City railyard. Too, positive aspects of using the APUs would be for contributing NOx and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area. Additionally, there would likely be an economic fuel savings/maintenance cost benefit for UP when operating the APU rather than the switch locomotive’s main diesel engine.

Potential Funding Mechanisms:

1.) Diesel Emissions Reduction Act (DERA) <https://www.epa.gov/cleandiesel>: This would certainly be one well-established method for funding a switch engine diesel locomotive project to install APUs to reduce idling. There is also an option under DERA for using VW settlement funds to reduce NOx emissions. See: <https://www.epa.gov/cleandiesel/volkswagen-vw-settlement-dera-option>.

2.) VW Settlement Funds: We note the that the Utah VW Settlement final plan did include an entry for possibly using some the State’s VW Settlement funds towards switch engine locomotive emission reductions (a copy of Utah’s final VW Settlement Plan is attached). However, the entry for switch engines did not receive any funding. We would suggest that perhaps a re-evaluation of the switch engines for funding under the VW Settlement plan may be worth considering.

3.) Congestion Mitigation Air Quality (CMAQ) Funds: Traditionally, CMAQ funds made available from FHWA are used for highway congestion mitigation projects and transportation infrastructure projects in nonattainment and maintenance areas (see: https://www.fhwa.dot.gov/environMent/air_quality/cmaq/reference/cmaq_essentials/). We were made aware by our Office of Transportation and Air Quality (OTAQ) that FHWA had approved the Chicago Metropolitan Planning Organization’s (MPO) use of CMAQ funds for both APU and replacement of switch engine diesel locomotives (please see the attached .pdf file.) Should UDAQ and the Wasatch Front Regional Council (WFRC) desire to consider this approach for funding, in part, the APUs for the UP switch engine diesel locomotives, we recommend additional consultation with FHWA-UT and UDOT.

If you have specific questions on the application of this particular funding mechanism in Chicago, please consider contacting the Chicago MPO and FHWA-IL at:

Doug Ferguson
Chicago Metropolitan Agency for Planning
dferguson@cmap.illinois.gov
(312) 386-8824

John Donovan
Federal Highway Administration
Illinois Division
JOHN.DONOVAN@DOT.GOV
(312) 353-4048

4.) Economic Incentive for Union Pacific: If the above suggested funding mechanisms are considered, but not potentially viable for the UDAQ perhaps an approach can be made to UP to consider the economic aspects of installing APUs on their switch engine locomotives. In short, the APUs would give a quick return on investment through diesel fuel savings (rather than idling the locomotive’s main diesel engine) and a reduction in the operation/maintenance costs associated with idling the main diesel engine. As noted above, and in addition to economic benefits, UP would also be viewed as a “good neighbor” for communities adjacent to the UP Salt

Lake City railyard and for contributing NO_x and VOC emission reductions toward attainment of the 2006 24-hour PM_{2.5} NAAQS and the 2015 8-hour ozone NAAQS in the Salt Lake area.

To assist UDAQ, the EPA can also provide APU cost benefit information from our review/evaluation of an APU retrofit project on Montana Rail Link (MRL) locomotives (both switcher and road locomotives). In addition, we can provide emissions calculating tools from the EPA and as developed by the Colorado Department of Public Health and Environment for APU projects. Finally, the EPA would also be available to assist the UDAQ with discussions of such APU projects with UP.

We look forward to continuing our discussions with you on these APU projects and please let me know if there are any questions.

Thank you.

Kerri Fiedler

Kerri Fiedler
Supervisor, Indoor Air, Toxics & Transportation Unit (8P-AR)
EPA Region 8
1595 Wynkoop St.
Denver, CO 80202
Phone: (303) 312-6493
fiedler.kerri@epa.gov

Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 10/2/2018 3:34:06 PM
To: Lohrke, Gregory [lohrke.gregory@epa.gov]; Olson, Kyle [Olson.Kyle@epa.gov]
CC: Fiedler, Kerri [Fiedler.Kerri@epa.gov]
Subject: Colorado and Utah's Final VW Mitigation Settlement Funds Plans
Attachments: Colorado_Final__VW_Beneficiary_Mitigation_Plan_May-2018.pdf;
Utah_VW_Settlement_Funds_Final_Mitigation_Plan_June-2018.pdf

Hi Folks,

As Kerri asked, I located both the subject final VW mitigation plans (please see the attached .pdf files)

I would note that with regard to locomotive switch engines, both plans list them as a potential category to consider for projects; however, both plans currently allocate **\$0** towards this particular category.

Thanks!

Tim

Tim Russ
Environmental Scientist
USEPA Region 8
Air Program
1595 Wynkoop Street (8P-AR)
Denver, CO 80202-1129
Ph. (303) 312-6479
Fax (303) 312-6064
e-mail: russ.tim@epa.gov



State of Utah

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Lieutenant Governor

Department of Environmental Quality

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Randal S. Martin
Alan Matheson
John Rasband
Arnold W. Reitze Jr.
William C. Stringer
Bryce C. Bird,
Executive Secretary

DAQ-053-19

UTAH AIR QUALITY BOARD MEETING

FINAL AGENDA

Wednesday, June 5, 2019 - 1:30 p.m.
195 North 1950 West, Room 1015
Salt Lake City, Utah 84116

- I. Call-to-Order
- II. Date of the Next Air Quality Board Meeting: June 24, 2019 at 1:30 p.m.
- III. Approval of the Minutes for March 6, 2019, and May 1, 2019, Board Meetings.
- IV. Propose for Final Adoption: R307-401-10. Source Category Exemptions. Presented by Thomas Gunter.
- V. Propose for Public Comment: Amend SIP Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability; and Part F, Vehicle Inspection and Maintenance Program, Cache County. Presented by Thomas Gunter.
- VI. Propose for Public Comment: Amend R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; and R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County. Presented by Thomas Gunter.
- VII. Propose for Public Comment: Amend R307-204. Emission Standards: Smoke Management. Presented by Thomas Gunter.
- VIII. Pacific Energy and Mining Company – Settlement Agreement. Presented by Rik Ombach.
- IX. Informational Items.
 - A. Air Toxics. Presented by Leonard Wright.
 - B. Compliance. Presented by Harold Burge and Rik Ombach.
 - C. Monitoring. Presented by Bo Call.
 - D. Other Items to be Brought Before the Board.
 - E. Board Meeting Follow-up Items.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources at (801) 536-4281, TDD (801) 536-4284 or by email at lwys@utah.gov.

ITEM 3



State of Utah

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Department of Environmental Quality

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Executive Secretary

UTAH AIR QUALITY BOARD MEETING

March 6, 2019 – 1:30 p.m.

195 North 1950 West, Room 1015
Salt Lake City, Utah 84116

DRAFT MINUTES

I. Call-to-Order

Erin Mendenhall called the meeting to order at 1:31 p.m.

Board members present: Erin Mendenhall, Cassady Kristensen, Kevin Cromar, Mitra Kashanchi, Alan Matheson, Arnold Reitze, Michael Smith, William Stringer (attendance by phone)

Excused: Randal Martin

Executive Secretary: Bryce Bird

II. Date of the Next Air Quality Board Meeting: May 1, 2019

No April 2019 Board meeting.

III. Approval of the Minutes for February 6, 2019, Board Meeting.

- Arnold Reitze motion to approve the minutes. Michael Smith seconded. The Board approved unanimously.

IV. Propose for Public Comment: Revisions to SIP Section XX. Regional Haze, Parts A and D. Presented by Jay Baker.

Jay Baker, Environmental Scientist at DAQ, stated that in June 2015, the Board approved the Regional Haze State Implementation Plan (SIP) sections to address best available retrofit technology (BART) for both PM and an alternative to BART for NO_x. Subsequently, in 2016, EPA approved the PM portion of the SIP, but they disapproved the alternative to BART for NO_x and issued a Federal Implementation Plan (FIP). The FIP has been stayed in the Courts. This SIP revision is to provide additional analysis to support the BART alternative for NO_x and to demonstrate that the alternative will provide greater visibility improvement than would be achieved through the installation of the most stringent NO_x controls.

As an explanation of the different emissions controls, the FIP requires selective catalytic reduction (SCR) on the four power generation units, Hunter power units 1 and 2 and Huntington power units 1 and 2, versus this plan which required some controls on Hunter unit 3. It also required the closure of the Carbon power plant units 1 and 2. In addition, the Carbon power plant isn't a BART eligible unit and it did not need to be analyzed for BART, but UDAQ included it as part of the alternative which is allowable.

In the previous submittal, Utah used a weight-of-evidence (WOE) analysis to show that the alternative was indeed better than BART. One of the reasons that EPA disapproved that BART alternative was that the WOE analysis did not show that the alternative was clearly better than BART. EPA also acknowledged that the WOE analysis was very subjective. When UDAQ did the analysis, all nine pieces of evidences were weighted equally, but when EPA reviewed our SIP, they put all of the weight on one of those pieces of evidence and essentially ignored the other eight.

In this submittal, Utah did new dispersion modeling and used a two-pronged test that is prescribed by the regional haze rule. The required two prongs are that visibility does not decline in any Class I area, and that there is an overall improvement in visibility determined by comparing the average differences between BART and the alternative over all affected Class I areas.

In addition, the NO_x emissions limits in this SIP for PacifiCorp Hunter units 1 and 2 and Huntington units 1 and 2, are more stringent than EPA's presumptive BART limits, the SIP also makes enforceable the closure of the Carbon power plant, and it also takes credit for the installation of the low NO_x burners at Hunter unit 3.

All of these controls are already in place and in force. The EPA's more stringent plan wouldn't be installed until 2023 as required. Demonstration that the alternative to BART meets the requirements of the two prong test is included as part of the technical support documentation for the SIP. The visibility modeling showed that we meet the two prongs of the test. Also, staff has worked closely with EPA to make sure this SIP revision would be acceptable to them. Staff recommends that the Board propose revisions to SIP Section XX Part A and Part D(6) for public comment.

- Michael Smith motioned that the Board approve for public comment the amended Utah State Implementation Plan Section XX.A. Regional Haze. Executive Summary; and Section XX.D(6). Regional Haze. Long-Term Strategy for Stationary Sources. Best Available Retrofit Technology (BART) Assessment for NO_x and PM. Cassidy Kristenen seconded. The Board approved unanimously.

V. Propose for Public Comment: Amend R307-110-28. Regional Haze. Presented by Thomas Gunter.

Thomas Gunter, Rules Coordinator at DAQ, stated that the amendments to Section XX, Regional Haze, Parts A and D will have to be incorporated into the Utah Air Quality Rules. R307-110-28 is the rule that incorporates these new amendments into the rules. If the Board adopts the amendments proposed to Section XX, these amendments will become part of Utah's SIP when the rule is finalized. Staff recommends that the Board propose rule 307-110-28 for public comment.

- Mitra Kashanchi motioned the amended R307-110-18, Regional Haze, be proposed for public comment. Arnold Reitze seconded. The Board approved unanimously.

VI. Propose For Public Comment: Amend R307-150-3. Applicability. Presented by Thomas Gunter.

Thomas Gunter, Rules Coordinator at DAQ, stated that Utah's Regional Haze SIP contains sulfur dioxide milestones (SO₂) that are based on the 2006 SO₂ emissions from power plants. To ensure that SO₂ emissions reductions are occurring, R307-150 requires power plants to report their annual SO₂ emissions. In 2015, the Board approved a SIP revision with an alternative to BART for NO_x. Part of the alternative included the closure of the Carbon power plant. Emission reductions of SO₂ from the closure were included in the demonstration, showing that the alternative was better than BART. Because the SO₂ reductions are part of the BART alternative for NO_x, they should not be counted towards reductions in the SO₂ milestone program. Accordingly, Staff is proposing an amendment to R307-150-3, requiring the Carbon power plant SO₂ emissions to be reported as 8,005 tons/year in the annual SO₂ Milestone Report to EPA. Staff recommends that the Board propose amended R307-150-3 for public comment.

- Arnold Reitze motioned that the Board propose the amended R307-150-3, Applicability, for public comment. Mitra Kashanchi seconded. The Board approved unanimously.

VII. Propose for Public Comment: Amend R307-401-10. Source Category Exemptions. Presented by Thomas Gunter.

Thomas Gunter, Rules Coordinator at DAQ, stated that R307-401 currently requires a source with the potential to exceed the small source exemption thresholds described in R307-401-9 to submit a notice of intent and receive an approval order. In April of 2018, DAQ received a notice of intent for a gasoline dispensing facility. Staff reviewed the notice of intent, evaluated potential permitting actions, and determined that an approval order would not include additional requirements for gasoline dispensing facility sources beyond those already required in R307-328 and 40 CFR 63 Subpart 6C. Therefore, R307-401-10 needs to be amended to include gasoline dispensing facilities as an exempt source category from the requirement to obtain an approval order in R307-401-5 through R307-401-8. Staff recommends that the Board propose amended R307-401-10 for public comment.

Jaden Materi, Environmental Engineer at DAQ, added that to his knowledge there have been no sources in the past that asked for such an exemption until 2018, as mentioned above.

- Michael Smith motioned that the Board propose the amended R307-401-10, Source Category Exemptions, for public comment. Mitra Kashanchi seconded. The Board approved unanimously.

Staff responded to the question if there are other source category exemptions that this would be appropriate, for instance small emergency generators in office buildings. There is always a potential which would be evaluated, but most of those small sources fall under the small source exemptions thresholds of 500 tons per year of volatile organic compounds.

VIII. HJG Utah, LLC - Final Settlement Agreement. Presented by Jay Morris and Jason Krebs.

Jay Morris, Compliance Branch Manager at DAQ, stated that HJG Utah, LLC (HJG) operates a salt water/produced water injection facility in Duchesne County. On January 27, 2017, DAQ issued an notice of violation to HJG for failing to submit a notice of intent and receive an approval order prior to constructing the Blue Bench facility. On July 31, 2017, the DAQ filed a lawsuit to collect penalties and secure the company's compliance with Utah environmental laws. As a result of the lawsuit, HJG submitted a notice of intent and received an approval order bringing them into compliance with Utah environmental laws. To resolve the penalty portion of the lawsuit, the DAQ and HJG have negotiated a total settlement of \$140,000. Half of the penalty will be paid in cash and half of the penalty will be deferred for a 2 year period. In accordance with Utah Code, this settlement is provided to the Board for

review as the penalty exceeds \$25,000. The DAQ will withhold any further action on this case until the Board approves or disapproves the settlement. Staff recommends that the Board approve the penalty amount and the associated settlement agreement.

- Cassady Kristensen motioned that the Board approve the final settlement agreement for HJG Utah. Mitra Kashanchi seconded. The Board approved unanimously.

Bryce Bird announced Jay Morris as the new Compliance Branch Manager and emergency response activities coordinator at DAQ. Jay replaces Rusy Ruby who retired in December 2018.

IX. Informational Items.

A. Air Toxics. Presented by Robert Ford.

B. Compliance. Presented by Jay Morris and Harold Burge.

It was noted that the compliance activities memorandum now lists the current outstanding and unresolved notices of violations going back to 2015.

C. Monitoring. Presented by Bo Call.

Bo Call, Air Monitoring Section Manager at DAQ, gave an update on the monitoring data. For PM2.5 data, the Smithfield monitor had 3 days with the highest values exceeding the standard in January. Typically, the majority of days that we exceed the standard happen in January, followed by December as the next high month. For the ozone standard, we look at the 4th high number for regulatory purposes. The ozone standard is 70 parts per billion (ppb). So far in 2019, ozone in the Uinta Basin shows that the Ouray monitor has a 4th high this year at 98 ppb. In addition, the EPA is responsible for exceptional event demonstrations on Tribal lands in which the Tribe does the monitoring. For the Uinta Basin, the monitor that drives the nonattainment area is on Tribal lands which impacts the state as well. The State's Roosevelt monitor is also showing a 4th high of 87 ppb so far for 2019.

D. Other Items to be Brought Before the Board.

Bryce Bird stated that a final legislative summary will be sent to the Board. Most of the bills that have been discussed previously are moving forward, but there are some bills that have been held in rules. There was a lot of support for air quality this year. Although DAQ will not be receiving the full \$100 million requested by the Governor, we are confident that it will still be significantly more than what has ever been appropriated for air quality in the past.

At the January working lunch, the Board asked that staff put together recommendations on the penalties of violations issued by compliance staff.

E. Board Meeting Follow-up Items.

- Three Board members terms have expired. Under statute, Board members can continue to serve up to 90 days after expiration until reappointments are approved during the legislative session or at the next interim meeting.

Meeting adjourned at 2:08 p.m.



State of Utah

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UTAH AIR QUALITY BOARD MEETING

May 1, 2019 – 1:30 p.m.

195 North 1950 West, Room 1015
Salt Lake City, Utah 84116

DRAFT MINUTES

I. Call-to-Order

Erin Mendenhall called the meeting to order at 1:32 p.m.

Board members present: Erin Mendenhall, Cassady Kristensen, Kevin Cromar, Mitra Kashanchi, Randal Martin, Alan Matheson, Arnold Reitze, Michael Smith, William Stringer

Executive Secretary: Bryce Bird

II. Date of the Next Air Quality Board Meeting: June 5, 2019

III. Informational Items.

A. Upcoming Rulemaking Schedule. Presented by Thomas Gunter.

Thomas Gunter, Rules Coordinator at DAQ, gave a presentation on proposed items to be brought before the Board from June 2019 to January 2020.

In response to the status of the carbon monoxide (CO) redesignation, it was stated that Provo's second 10-year term was completed in 2015, and the 20-year term of the maintenance plan would be due in 2025.

In response to the question that if the Board wants to consider changes, in terms of a rulemaking process, would that be done the same way the Board handles rule proposals for public comment, to which staff responded that is correct.

B. Scheduling of Working Meetings.

The discussion focused on opportunities to hold Board meetings in different areas of the state based upon the rules/programs affecting the different local areas, for instance holding a meeting in Logan, when the Cache County I/M Program State Implementation Plan (SIP) and rules are presented to the Board. This would allow local areas to provide comment directly to the Board and to participate in the process directly. Also, it could be used as an educational experience for the Board as they visit different locations throughout the state.

A concern of extra emissions created for travel was discussed. As well as the idea of using technology when holding off-site meetings so that traveling would not be needed for those wishing to participate electronically.

The Board will hold future meetings in areas besides the office in Salt Lake City. This is an important issue that local communities have the opportunity to participate in the Board's process locally. For a future meeting, staff was asked to work out plans for two most effective locations for off-site Board meetings so that the Board can fulfill its desire to be educational, efficient with travel, and impactful on opening community dialog.

C. Compliance Summary Follow Up. Presented by Jay Morris.

Jay Morris, Compliance Branch Manager at DAQ, responded to the Board's request in January 2019 of recommendations related to the penalties and procedures of the compliance process. Mr. Morris began with an overview of the inspection/enforcement cycle. There are two processes for resolution of a violation. The preferred method is with a compliance advisory and early administrative settlement to resolve the alleged violations and it also gets the source back into compliance as quickly as possible. The more formal method is with a notice of violation. From 2014 to 2018, approximately 7,300 inspections were conducted with a 99.95% success rate of return back to compliance after a first time violation. The 0.05% is for repeat violations. The Legislature capped the penalty amount at \$10,000 per day per violation which the DAQ penalty policy cannot exceed. The goal is to get a source back into compliance and the penalty worksheet helps staff calculate an appropriate and reasonable penalty based on the size of the company and the severity of the violations while treating everyone fairly but also enforcing the laws and rules of the state for air quality. In addition to working with the Attorney General's Office on the internal penalty worksheet to provide consistency while still allowing flexibility on a case by case basis, compliance staff is working with permitting staff when a permitting action is required for a source to return to compliance as quickly and efficiently as possible.

In discussion, Mr. Cromar stated that the concern in January was how the per day per violation penalty was being applied and that there appeared to be no multiplication factor based on how many days for the violation. Staff explained that the worksheet has an events column which is the number of times violations would be counted. As for the per day penalty, most violations are one-time events. And if it's extended, staff has the option of calculating penalties per day, per week, or per month. Penalty amounts are based on how serious the violation is and how cooperative the source is coming back into compliance. Mr. Cromar added that there still needs to be some clarity on what really is a per day violation, and it might be helpful if two columns were added to the worksheet showing the calendar number of days at which violations occurred, and a column showing the suggested number of penalty days to apply by the inspector. Some Board comments included that the burden of proof is on the business to provide the data to demonstrate that all the days between certain days were not in violation, and that it's unclear what will be gained by the additional columns. Others were okay with the additions, but stated

that it was unclear originally that what appeared to be violations for two years by a source were negotiated to a seemingly small amount which started the request to staff for recommendations on how to handle the few outliers so that there is consistency with decisions and to take into consideration economic burden on a company over potential public health impacts of the violation. After discussion and majority approval, Mr. Bird will accept the Board's recommendation to add the two requested columns to the compliance penalty worksheet.

D. Air Quality Health Messaging. Presented by Bo Call.

Bo Call, Air Monitoring Section Manager at DAQ, gave background information on how data is collected. A number of monitoring stations across the state collect two types of data, near-real time and filter data. Near-real time data which updates hourly at approximately 30 minutes past the hour. Filter data which takes longer to analyze and are not generally available for several weeks to months. Other data such as toxics network data or speciation sites go to third parties and results can take six months. Any other general filter data takes about two weeks to process.

DAQ meets its requirement to report monitoring data through its department web page, feeds requested by outside organizations, the mobile UtahAir app, and EPA's AirNow or Air Quality Index (AQI). The data is set up to go automatically to the various sites. In addition, AirNow does not collect its own data. The data for Utah that feeds AirNow comes directly from our monitoring data which automatically uploads.

Monitoring staff forecasts are pretty good at making the calls. Forecasts are based on the highest inspected pollutant and based on what the 24-hour or 8-hour average is predicted to be. The forecast is updated twice a day, first in the morning before 8:30 a.m. and in the afternoon towards the end of the day. In fact, a SIP requirement in 1992 requires that DAQ put out a daily notification as well as a requirement to submit data to AirNow.

In regards to switching between an ozone issue and particulate issue in forecasting current air quality awareness, the division is able to switch platforms. Currently, the web page is set up for a winter season and a summer season. Priority can change as to what is shown on the web page based on the primary pollutant for a particular season. Air quality messages can also be tailored to events such as wild fire, high wind, and fireworks. It was also mentioned that DAQ does not report health relevant information on its web page, and if there was interest to include such information that might be something to look into.

Board member, Michael Smith, whose second term expired March 2019, was recognized for eight years of service on the Air Quality Board. Mr. Smith began attending Board meetings 29 years ago, and through his work on the Board he has had the privilege of interacting with people from various places, industries, and government. He is thankful for the opportunity he's had to be of service.

E. Regional Haze Presentation. Presented by Sierra Club.

Christopher Thomas of Sierra Club started his presentation with a regional haze timeline. Beginning in 2003, the original Regional Haze (RH) State Implementation Plan (SIP) focused on sulphur as the priority pollutant. Then in 2008, an amendment was made to address nitrogen oxides (NO_x) and particulate matter (PM), to which in 2014 the pollution controls for NO_x and PM were implemented. In 2011, EPA passed a mercury and air toxics rule which would lead to the closure of the Carbon power plant in 2015. Also in 2015, the state adopted an amended SIP which took credit for the Carbon plant closure. The amended plan was later disapproved by EPA in 2016 and EPA ordered four new selective catalytic reduction controls (SCRs) be installed to

cut NO_x on the four best available retrofit technology (BART) eligible units. Rocky Mountain Power and the state filed a lawsuit on EPA's order which is currently stayed in the courts. This brings forth the plan by the state today which does not propose any additional pollution controls. Comparing the EPA federal implementation plan (FIP) and the state's alternative SIP shows that once corrected, EPA's plan will mean 9,103 tons of reduced NO_x and SO₂. In addition, a vote for SCRs will not necessarily prolong the life of these coal plants and it will hold the coal units to a pollution standard that is accepted in other parts of the county. Requiring pollution control also helps level the playing field with other non-polluting sources.

Cory MacNulty of the National Parks Conservation Association stated that visitors to Utah national parks spend an estimated \$1.1 billion in gateway communities and generate an estimated \$1.7 billion in economic output each year. As we entice over 15 million people every year to see our landscapes, air pollution shrinks those views across the land. Every hour that these plants dump thousands of pounds of NO_x pollution into the air, it affects visibility. There are real downstream costs of this pollution that will not be cleaned up in the state's plan. EPA recently conducted regional haze emissions for 2028 that took into account the emissions reductions that Utah has proposed as its BART alternative. EPA found that even with the emission reductions of the BART alternative, none of the Class I areas modeled by Utah were on the glide path to achieve reasonable progress towards the national visibility goal of natural visibility conditions by 2064.

Mr. Thomas and Ms. MacNulty asked that the Board be proactive to combat this air pollution, and hopes that the Board will vote no to the state's SIP revision and instead require reductions of NO_x and PM from Units 1 and 2 at Hunter and Huntington, as required by EPA in 2016. It was also noted, that an expert contractor has been hired to review the modeling data which will hopefully be included in the their technical comments.

In response to what has been done, if anything, about the addition of the San Rafael Swell to wilderness status, Ms. MacNulty stated that the federal government gives it that status, but that it is up to the state to decide if the area will become a Class I area.

F. Regional Haze Update. Presented by Jay Baker.

Jay Baker, Environmental Scientist at DAQ, stated that the regional haze program comes from the Clean Air Act (CAA) with three requirements: to prevent any future impairment of visibility from manmade air pollution; remedying of any existing impairment of visibility from manmade air pollution; and applies to mandatory federal Class I areas. There are 156 Class I areas in the United States, and five of those are in Utah. In 1980, the EPA developed the reasonably attributable visibility impairment rule which identified significant sources that contributed to visibility. Then in 1999, we got the regional haze rule as we currently know it, which requires that states develop programs to assure reasonable progress toward meeting the national visibility goal. Mr. Baker described the planning periods beginning with the baseline in 2000 through the second planning period ending in 2018 and briefly explained plans for the subsequent planning periods to 2064. During each planning period the state has to show that it is somewhere in the vicinity of the glide path of reasonable progress. Graphing illustrates that on the most impaired days, ammonium sulfate is the biggest contributing pollutant causing haze. In addition to the timeline previously described by Mr. Thomas, based on the recommendations of the Grand Canyon Visibility Transport Commission in 2003 SIP reductions focused on SO₂ and milestones from 2003 to 2018. When EPA disapproved the state's 2008 BART determination in 2012, they did not issue a FIP at that time but worked with the state to develop a SIP revision with a BART alternative that would meet the requirements of the CAA; later in 2016, EPA rejected the SIP

revision and promulgated a FIP. Finally, as comparison, the state's BART alternative proposes low NO_x burners with over-fired air on all Hunter and Huntington units, stricter emissions limits than the presumptive BART, and the Carbon power plant closure all at a cost of roughly \$38 million over a period of time based on EPA's estimates. The EPA's FIP calls for SCR on Units 1 and 2 at both Hunter and Huntington at a cost of roughly \$480 million over a period of time. Staff then responded to several questions.

When did the Carbon power plant close and why? Staff responded that the closure in April 2015 was due in part to the difficulty of the plant being able to comply with the mercury toxics rule, and then finally due to the regional haze rule which inevitably required its closure and their permit was rescinded.

As the emissions inventory is being done, is there any special effort to identify sources of ammonia in the area? Staff responded yes, and that in 2017, EPA revised the regional haze rule. In draft guidance for the rule, states look at 80% of the largest contributing sources to regional haze, which is currently being done. It was also noted, that SCR would increase ammonia emissions. As far as to what is the chemistry of the filter weight of the monitors, it was reported that those monitors are managed by the Park Service and not by the state.

Does PacifiCorp have sun setting of their coal-fired units? Yes, they do what is called an integrated resource plan which is revised about every two years and includes some closure dates that are projected out to mid- to late 2030.

In closing, Ms. Kristensen announced that Rio Tinto Kennecott is closing its onsite dual fuel fired coal/natural gas power plant in Utah. Pending approvals, they will purchase renewal energy credit through Rocky Mountain Power for the entire load of its sole unit.

G. Tour of new DEQ Technical Support Center.

Staff, Mr. Smith, and several members of the public in attendance at the Board meeting toured the new DEQ technical support center.

Meeting adjourned at 3:55 p.m.

ITEM 4



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-046-19

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Alan Humpherys, Environmental Program Manager

DATE: May 21, 2019

SUBJECT: PROPOSE FOR FINAL ADOPTION: R307-401-10. Source Category Exemptions.

On March 6, 2019, the Board approved amended R307-401-10 for public comment. These amendments exempt gasoline dispensing facilities (GDF) from the requirement to obtain an approval order (AO) in R307-401-5 through R307-401-8.

A public comment period was held from April 1 – May 1, 2019. No public hearing was requested. The only comments were received on April 26, 2019, submitted by the 75th Civil Engineer Group on Hill Air Force Base. Both comments are summarized below:

Comment #1 – UDAQ should extend the exemption of GDF to major sources in addition to minor sources.

DAQ Response: UDAQ disagrees with this comment. Major sources as defined in R307-101-2 located in a nonattainment area would be subject to federal Major Nonattainment New Source Review (NNSR) requirements. These requirements would include lowest achievable emission rate (LAER), offsets, analysis of alternatives, and a state-wide compliance demonstration. Major sources located in an attainment area may be subject to prevention of significant deterioration (PSD) requirements. These requirements would include best available control technology (BACT) and an air quality demonstration.

Both NNSR and PSD requirements are established in the Clean Air Act. If UDAQ were to exempt a major source from the requirement to obtain an AO, the source would be in violation of the Clean Air Act.

The commenter distinguishes the difference between a Major Source as defined in R307-101-2 and Major Source of HAP as defined in 40 CFR 63.2. The definition of Major Source of HAP in 40 CFR 63.2 does not apply to permitting requirements in R307-401. This definition is only used to determine the

DAQ-046-19

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applicability of different federal National Emission Standards of Hazardous Air Pollutants (NESHAP) requirements. Regardless of whether the source is defined as a major source under R307-101-2 or not, the source must comply with any applicable NESHAP requirement or other federal requirement.

No changes were made as a result of this comment.

Comment #2 – UDAQ should extend the exemption of GDF to fuel dispensing facilities that dispense other fuels that have a vapor pressure less than gasoline and apply a control such as R307-327 Petroleum Liquid Storage.

DAQ Response: UDAQ disagrees with this comment. The DAQ has not evaluated fuels other than gasoline, and the commenter did not provide any impacts of including other fuels. The DAQ is not aware of other sources that would require a permit for the sole purpose of dispensing a fuel other than gasoline, and the commenter did not provide the list of these other sources. The controls for fuels other than gasoline were also not evaluated.

On February 13, 2017, the EPA released the Background Document: Air Quality Permit by Rule for New or Modified True Minor Source Gasoline Dispensing Facilities in Indian Country. This document states in the section Gasoline Dispensing Source Category Definition, “A GDF could also include equipment which dispenses diesel fuel. Furthermore, a GDF could be an operation supporting other activities at a facility which otherwise requires a permit.” The EPA further clarifies under the Source Category Characterization, “GDFs include all retail outlets such as traditional gasoline service stations, convenience stores, truck stops, marinas, and hypermarkets (e.g., warehouse clubs and big box stores), as well as private and commercial outlets such as those for centrally-fueled fleets, government operations, and private businesses. This generally does not include airports offering aviation gasoline.” The explanation by EPA supports the definition of GDF as in 40 CFR 63.11132.

No changes were made as a result of this comment.

Recommendation: Staff recommends the Board adopt R307-401-10 as amended.

R307-401-10

May 21, 2019

Page 1 of 1

R307. Environmental Quality, Air Quality.**R307-401. Permit: New and Modified Sources.**

R307-401-10. Source Category Exemptions.

The source categories described in R307-401-10 are exempt from the requirement to obtain an approval order found in R307-401-5 through R307-401-8. The general provisions in R307-401-4 shall apply to these sources.

(1) Fuel-burning equipment in which combustion takes place at no greater pressure than one inch of mercury above ambient pressure with a rated capacity of less than five million BTU per hour using no other fuel than natural gas or LPG or other mixed gas that meets the standards of gas distributed by a utility in accordance with the rules of the Public Service Commission of the State of Utah, unless there are emissions other than combustion products.

(2) Comfort heating equipment such as boilers, water heaters, air heaters and steam generators with a rated capacity of less than one million BTU per hour if fueled only by fuel oil numbers 1 - 6,

(3) Emergency heating equipment, using coal or wood for fuel, with a rated capacity less than 50,000 BTU per hour.

(4) Exhaust systems for controlling steam and heat that do not contain combustion products.

(5) A well site as defined in 40 CFR 60.5430a, including centralized tank batteries, that is not a major source as defined in R307-101-2, and is registered with the Division as required by R307-505.

(6) A gasoline dispensing facility as defined in 40 CFR 63.11132 that is not a major source as defined in R307-101-2. These sources shall comply with the applicable requirements of R307-328 and 40 CFR 63 Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities.

KEY: air pollution, permits, approval orders, greenhouse gases**Date of Enactment or Last Substantive Amendment: June 5, 2019****Notice of Continuation: May 15, 2017****Authorizing, and Implemented or Interpreted Law: 19-2-104(3)(q); 19-2-108**

APR 26 2019

DIVISION OF AIR QUALITY

25 April 2019



DEPARTMENT OF THE AIR FORCE
75TH CIVIL ENGINEER GROUP (AFMC)
HILL AIR FORCE BASE UTAH

Michelle L. Cottle
Chief, Environmental Branch
75th CEG/CEIE
7290 Weiner Street
Hill Air Force Base Utah 84056-5003

Mr. Thomas Gunter
Environmental Scientist, Utah Division of Air Quality
Attention: Public Comment R307-410-10 Source Category Exemptions
P.O. Box 144820
Salt Lake City Utah 84114-4820

Mr. Gunter,

Hill Air Force Base appreciates the opportunity to comment on the proposed amendment to R307-401 Permit: New and Modified Sources R307-401-10 Source Category Exemptions. It is our commitment to protect public health, our workforce, and the environment from harmful pollutants and this commitment includes participating in the stakeholder process.

1. All gasoline dispensing facilities (GDFs) and facilities dispensing fuel with a vapor pressure less than gasoline should be included with the R307-401-10 Source Category Exemptions.

Comment

Hill Air Force Base agrees with the Utah Division of Air Quality (UDAQ) that GDFs that are subject to R307-328 and 40 CFR 63 Subpart 6C would receive no additional requirements through the notice of intent (NOI) process; therefore, should be exempt from the NOI process. Also facilities dispensing fuels with a vapor pressure less than gasoline subject to R307-327 should be exempt from the NOI process.

Recommended Change

R307-401-10. Source Category Exemptions.

(6) A gasoline dispensing facility as defined in 40 CFR 63.11132 ~~that is not a major source as defined in R307-101-2~~ and facilities dispensing fuel with a vapor pressure less than gasoline. These sources shall comply with the applicable requirements of R307-327, R307-328 and 40 CFR 63 Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities.

Discussion

UDAQ should exempt the GDF source category from the requirement to obtain an approval order (AO) in R307-401-5 through R307-401-8 at both major and minor sources as defined in R307-101-2 that comply with the applicable requirements of R307-328 Gasoline Transfer and Storage and 40 CFR 63 Subpart 6C Gasoline Dispensing Facilities. UDAQ has determined that an AO would not include additional requirements for GDFs beyond those already required in R307-328 and 40 CFR 63 Subpart 6C. As a result of this statement, it can be inferred that best available control technology (BACT) would be defined as complying with the applicable requirements of R307-328 and 40 CFR 63 Subpart 6C. Any installation which complies with the applicable requirements of these rules would be complying with BACT and as a result should also be exempt from the requirement to receive an AO.

Hill Air Force Base has GDFs that are complying with the applicable requirements of R307-328 and 40 CFR 63 Subpart 6C. However, it should be noted that as Hill Air Force Base is a major source as defined in 40 CFR 63.2, there are no applicable requirements in 40 CFR 63 Subpart 6C for GDFs located at Hill Air Force Base. However, the same can be true of a source that is not major as defined in R307-101-2.

A major source is defined in R307-101-2 as follows.

“Major Source means, to the extent provided by the federal Clean Air Act as applicable to R307:

(1) any stationary source of air pollutants which emits, or has the potential to emit, one hundred tons per year or more of any pollutant subject to regulation under the Clean Air Act; or

(a) any source located in a nonattainment area for carbon monoxide which emits, or has the potential to emit, carbon monoxide in the amounts outlined in Section 187 of the federal Clean Air Act with respect to the severity of the nonattainment area as outlined in Section 187 of the federal Clean Air Act; or

(b) any source located in Salt Lake or Davis Counties or in a nonattainment area for ozone which emits, or has the potential to emit, VOC or nitrogen oxides in the amounts outlined in Section 182 of the federal Clean Air Act with respect to the severity of the nonattainment area as outlined in Section 182 of the federal Clean Air Act; or

(c) any source located in a nonattainment area for PM₁₀ which emits, or has the potential to emit, PM₁₀ or any PM₁₀ precursor in the amounts outlined in Section 189 of the federal Clean Air Act with respect to the severity of the nonattainment area as outlined in Section 189 of the federal Clean Air Act.

(2) any physical change that would occur at a source not qualifying under subpart 1 as a major source, if the change would constitute a major source by itself;

(3) the fugitive emissions and fugitive dust of a stationary source shall not be included in determining for any of the purposes of these R307 rules whether it is a major stationary source, unless the source belongs to one of the following categories of stationary sources:..."

40 CFR 63 Subpart 6C applies to each GDF located at an area source. An area source is defined in 40 CFR 63.2 as follows.

Area source means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

As a result of these definitions it is possible to have a minor source as defined in R307-101-2 that is not area source as defined in 40 CFR 63.2; therefore, not subject to any requirements in 40 CFR 63 Subpart 6C. A GDF at such a source would be exempt from the requirement to submit an NOI. However, a GDF located major source as defined in R307-101-2 that is also not an area source as defined in 40 CFR 63.2 would need to submit an NOI even though the GDFs at both the minor and major source would have the same controls. This application of the exemption is not consistent; therefore, UDAQ should extent the exemption to major sources as defined in R307-101-2.

UDAQ should also extend the exemption to fuel dispensing facilities that dispense other fuels that have a vapor pressure less than gasoline. For example, if a GDF exempt from the requirement to submit an NOI under the proposed exemption that also dispenses diesel fuel would still need to submit an NOI as a result of the diesel dispensing activity. UDAQ should extend the exemption to fuels with vapor pressure less than gasoline and apply a control such as R307-327 Petroleum Liquid Storage.

If you have any questions or would like to discuss this issue further, my point of contact is Dr. Erik Dettenmaier 75 CEG/CEIEA, at (801) 777-0888 or erik.dettenmaier.1@us.af.mil.

Sincerely



MICHELLE L. COTTLE, NH-03
Chief, Environmental Branch
75th Civil Engineer Group

ITEM 5



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-050-19

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Mat Carlile, Environmental Planning Consultant

DATE: May 24, 2019

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend SIP Section X, Part A, Vehicle Inspection and Maintenance Program, General Requirements and Applicability; and Part F, Vehicle Inspection and Maintenance Program, Cache County.

Utah Code Annotated 41-6a-1642 gives authority to each county to design and manage a vehicle inspection and maintenance (I/M) program when it is required to attain and maintain any national ambient air quality standard. Section X incorporates these county programs into the Utah State Implementation Plan (SIP). Section X, Part A summarizes I/M requirements that are common among all I/M programs. The other subparts (Parts B through F) contain the requirements for each county's unique I/M program. Section X, Part F is the section unique to Cache County's I/M program. Amendments to Section X, Part A were last adopted by the Board on December 4, 2012, and amendments to Part F were last adopted by the Board on November 6, 2013.

The Division of Air Quality (DAQ) is asking the Board to propose for public comment amendments to Parts A and F of Utah SIP Section X. The amendments to Part A incorporate amendments to Utah Code 41-6a-1642. Additionally, language has been added to clarify that counties must consult with the DAQ before making any changes to their program. These amendments do not change the overall I/M programs. The amendments to Part F remove the tailpipe emission inspection two speed idle test (TSI) which is currently required for vehicles older than 1995.

During the public comment period, a backsliding demonstration will be provided for the removal of the TSI. This analysis is required under Section 110(l) of the Clean Air Act (CAA) when removing control measures from the SIP, to ensure that the revision would not interfere with any applicable requirement concerning attainment or any other applicable requirement of the CAA.

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Staff worked closely with EPA and the Bear River Health Department to ensure that these amendments accurately reflect the current Cache County I/M program and that they are approvable by the EPA.

Staff Recommendation: Staff recommends the Board propose amended SIP Section X, Parts A and F for public comment.

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4 **UTAH STATE IMPLEMENTATION PLAN**
5
6 **SECTION X**
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8 **VEHICLE INSPECTION AND MAINTENANCE PROGRAM**
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10 **PART A**
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12 **GENERAL REQUIREMENTS AND APPLICABILITY**
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Adopted by the Utah Air Quality Board
[~~December 5, 2012~~]

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UTAH STATE IMPLEMENTATION PLAN
SECTION X
VEHICLE INSPECTION AND MAINTENANCE PROGRAM
PART A
GENERAL REQUIREMENTS AND APPLICABILITY

1. General Requirements

Federal I/M Program requirements: Utah was previously required by Section 182 and Section 187 of the Clean Air Act to implement and maintain an Inspection and Maintenance (I/M) program in Davis, Salt Lake, Utah, and Weber counties that met the minimum requirements of 40 code of federal regulation (CFR) Part 51 Subpart S and that was at least as effective as the EPA's Basic Performance Standard as specified in 40 CFR 51.352. The Basic Performance Standard requirement is no longer applicable as the relevant nonattainment areas in Davis, Salt Lake, Utah, and Weber counties have been redesignated to attainment / maintenance for the carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) and the 1-hour ozone NAAQS. Parts A, B, C, D, and E of Section X, together with the referenced appendices, continue to demonstrate compliance with the 40 CFR Part 51 provisions for Inspection and Maintenance Program Requirements for Davis, Salt Lake, Utah, and Weber counties and produce mobile source emission reductions that are sufficient to demonstrate continued maintenance of the applicable CO and 1-hour ozone NAAQS. In addition, the Cache, Davis, Salt Lake, Utah, and Weber counties' I/M programs are also utilized as a control measure to attain and maintain EPA's particulate NAAQS (PM_{2.5} and PM₁₀).

On-Board Diagnostics (OBD) Checks: By January 1, 2002, OBD checks and OBD-related repairs are required as a routine component of Utah I/M programs on model year 1996 and newer light-duty vehicles and light-duty trucks equipped with certified on-board diagnostic systems. The federal performance standard requires repair of malfunctions or system deterioration identified by or affecting OBD systems.

Utah I/M program history and general authority: The legal authority for Utah's I/M programs, Utah Code Annotated Section 41-6-163.6¹, was enacted during the First Special Session of the Utah legislature in 1983. I/M programs were initially implemented by Davis and Salt Lake counties in 1984, by Utah County in 1986, and by Weber County in 1990.

In 1990, the legislature enacted Section 41-6-163.7² that requires that counties with I/M programs use computerized I/M testing equipment, adopt standardized emission standards, and provide for reciprocity. Those requirements were fully implemented by Davis, Salt Lake, and Utah counties on September 1, 1991, and by Weber County on January 1, 1992.

¹ Renumbered and recodified in 2005 at Utah Code Annotated 41-6a-1642

² Renumbered and recodified in 2005 at Utah Code Annotated 41-6a-1643

1
2 Section 41-6-163.6 was again amended by the legislature in 1992 to include vehicles
3 owned and operated by the federal government, federal employees, and students and
4 employees of colleges and universities. The 1992 revision of 41-6-163.6 also established
5 more stringent restrictions for vehicles that qualify for a farm truck exemption.
6

7 Section 41-6-163.6 requires that, if identified as necessary to attain or maintain any
8 NAAQS, a county must create an I/M program that follows the criteria outlined in 41-6-
9 163.6. Once a county enacts regulations or ordinances, amendments to Section 19-2-104
10 in 1992 authorized the Utah Air Quality Board to formally establish those requirements
11 for county I/M programs after obtaining agreement from the affected counties. Section
12 41-6-163.6 was also amended to allow the counties to subject individual motor vehicles
13 to inspection and maintenance at times other than the annual inspection.
14

15 Section 41-6-163.6 was amended in 1994 to authorize implementation of I/M programs
16 stricter than minimum federal requirements in counties where it is necessary to attain or
17 maintain ambient air quality standards. Section 41-6-163.6 requires preference be given
18 to a decentralized program to the extent that a decentralized program will attain and
19 maintain ambient air quality standards and meet federal requirements. It also requires
20 affected counties and the Air Quality Board to give preference to the most cost effective
21 means to achieve and maintain the maximum benefit with regard to air quality standards
22 and to meet federal air quality requirements related to motor vehicles. The legislature
23 indicated preference for a reasonable phase-out period for replacement of air pollution
24 test equipment made obsolete by an I/M program in accordance with applicable federal
25 requirements and if such a phase-out does not otherwise interfere with attainment of
26 ambient air quality standards.
27

28 House Concurrent Resolution No. 9 of the 1994 General Session of the legislature
29 (H.C.R. 9) was a concurrent resolution of the legislature and the governor expressing
30 opposition to the EPA position regarding the implementation of enhanced vehicle
31 inspection and urging the EPA to recognize the benefits of other vehicle inspection
32 program options and to work with the state to develop workable plans for attaining
33 ambient air quality standards and protecting public health.
34

35 In 1995, the legislature amended Section 41-6-163.7 to rescind the requirement for I/M
36 program standardization and reciprocity between counties. While advantageous,
37 standardization and reciprocity between I/M counties is no longer required, and each I/M
38 county is free to develop an I/M program that best meets the respective county's needs.
39

40 In 2002, the Legislature amended Section 41-6-163.7 to allow for inspection every other
41 year for cars that are six years old or newer on January 1 each year. This provision is
42 applicable to the extent allowed under the current state implementation plan for each
43 area.
44

45 In 2005, the Legislature renumbered Section 41-6-163.6 and re-codified it as Section 41-
46 6a-1642. The Legislature also amended Section 41-6a-1642 to allow counties with an

1 I/M program to require college students and employees who park a motor vehicle on
2 college or university campus that is not registered in a county subject to emission
3 inspection to provide proof of compliance with an emission inspection.
4

5 Section 41-6a-1642 was amended in 2008 to provide an exemption for vintage vehicles,
6 which are defined in Section 41-21-1. Section 41-6a-1642 was again amended in 2009 to
7 provide an exemption for custom vehicles, which are defined in Section 41-6a-1507.
8

9 In 2010, the legislature enacted Section 41-1a-1223 that allows counties with an I/M
10 program to impose a local emissions compliance fee of up to three dollars. This same bill
11 amended Section 41-6a-1642 to require I/M counties that impose the fee to use revenues
12 generated from the fee to establish and enforce an emission inspection and maintenance
13 program.
14

15 Section 41-6a-1642 was amended in 2011 to require I/M counties' regulations and
16 ordinances to be compliant with the analyzer design and certification requirements
17 contained in the SIP.
18

19 In 2012, the Legislature amended Section 41-6a-1642 to allow a motor vehicle that is less
20 than two years old as of January 1 of any given year to be exempt from being required to
21 obtain an emission inspection. This provision is applicable to the extent allowed under
22 the current SIP for each area. This bill went into effect on October 1, 2012. In addition,
23 the legislature also amended Section 41-1a-205 to allow a safety and emissions
24 inspection issued for a motor vehicle during the previous 11 months may be used to
25 satisfy the safety and emissions inspection requirements³. The effective date of this bill is
26 January 1, 2013. The legislature also amended Section 41-1a-1223 to allow the counties
27 to collect a \$2.25 fee for those vehicles that are registered for a six-month period under
28 Utah Code Annotated 41-1a-215.5. The effective date of this bill is July 1, 2013.
29

30 Section 41-6a-1642 was amended in 2013 to include the date that notice is required and
31 the date the enactment, change, or repeal will take effect if a county legislative body
32 enacts, changes, or repeals the local emissions compliance fee. Section 41-6a-1642
33 provides that for a county required to implement a new vehicle emissions inspection and
34 maintenance program, but for which no current federally approved state implementation
35 plan exists, a vehicle shall be tested at a frequency determined by the county legislative
36 body, in consultation with the Air Quality Board, that is necessary to comply with federal
37 law or attain or maintain any national ambient air quality standard and establishes
38 procedures and notice requirements for a county legislative body to establish or change
39 the frequency of a vehicle emissions inspection and maintenance program.
40

41 In 2017, the Legislature amended Section 41-6a-1642 to allow a county that imposes a
42 local emissions compliance fee to use revenue generated from the fee to promote
43 programs to maintain a national ambient air quality standard. At that time the legislature

3 Utah Code 41-6a-1642(7) states that "the emissions inspection shall be required within the same time limit applicable to a safety inspection under Section 41-1a-205."

also amended 41-6a-1642 to state that vehicles may not be denied registration based solely on the presence of a defeat device covered in the Volkswagen partial consent decrees or a United States Environmental Protection Agency-approved vehicle modification.

Notification of Programmatic Changes: The legislative body of a county identified in Utah Code 41-6a-1642 (1) shall consult with the Director of the Utah Division of Air Quality prior to their public comment process for any amendments to their I/M regulations or ordinances. Consultation should include a written notice describing the proposed changes to the I/M program.

2. Applicability

General Applicability: Utah Code Annotated 41-6a-1642 gives authority to each county to implement and manage an I/M program to attain and maintain any national ambient air quality standard (NAAQS). Davis, Salt Lake, Utah, and Weber counties were required under Section 182 and 187 of the Clean Air Act to implement an I/M program to attain and maintain the ozone and carbon monoxide NAAQS. All of Utah's ozone and carbon monoxide maintenance areas are located in Davis, Salt Lake, Utah, and Weber counties. In addition, a motor vehicle I/M program is a control measure for attaining the particulate matter NAAQS in Cache, Davis, Salt Lake, Utah, and Weber counties. Utah's SIP for I/M is applicable county-wide in Cache, Davis, Salt Lake, Utah, and Weber counties.

3. General Summary

Below is a general summary of Utah's I/M programs. Part B, C, D, E and F of this section of the SIP provide a more specific summary of I/M programs for Cache, Davis, Salt Lake, Utah, and Weber counties. These parts also incorporate the individual county I/M ordinances/regulations and policies that provide for the enforceability of the respective I/M programs.

Network Type: All Utah I/M programs are comprised of a decentralized, test-and-repair network.

I/M program funding requirements: Counties with I/M programs allocate funding as needed to comply with the relevant requirements specified in Utah's SIP; the Utah statutes; county ordinances, regulations and policies; and the federal I/M program regulation. Program budgets include funding for resources necessary to adequately manage the programs conduct covert and overt audits, including repairs; assist and educate inspectors, station owners, and the public; manage, analyze, and report data; ensure compliance with the program by inspectors, stations, and vehicle owners; and evaluate and upgrade the programs.

1 *Funding mechanisms:* Utah's I/M programs are funded through several mechanisms
2 including, but not limited to, a fee which is collected at the time of registration by the
3 Utah Tax Commission Division of Motor Vehicles or the county Assessor's Office. Those
4 monies are remitted to the county in which the vehicle is registered. The collection of
5 fees for various permitting activities and the selling inspection certificates to inspection
6 stations are the other mechanisms. A fee schedule can be found in an appendix to each
7 county I/M ordinance or regulation.

8
9 *Government fleet:* Section 41-6a-1642(1)(b) of the Utah Code requires that all vehicles
10 owned or operated in the I/M counties by federal, state, or local government entities
11 comply with the I/M programs.

12
13 *Vehicles owned by students and federal employees:* Section 41-6a-1642(5) provides a
14 provision that counties may require universities and colleges located in Utah's I/M areas
15 to require proof of compliance with the I/M program for vehicles which are permitted to
16 park on campus regardless of where the vehicle is registered. Vehicles operated by
17 federal employees and operated on a federal installation located within an I/M program
18 area are also subject to the I/M program regardless of where they are registered. Proof of
19 compliance consists of a current vehicle registration in an I/M program area, an I/M
20 certificate of compliance or waiver, or evidence of exempt vehicle status.

21
22 *Rental vehicles:* All vehicles available for rent or use in an I/M county are subject to the
23 county I/M program. To the extent practicable, all vehicles principally operated in the
24 county are subject to the I/M program.

25
26 *Farm truck exemption:* Eligibility for the farm truck exemption from the I/M programs is
27 specified in Section 41-6a-1642(4) and must be verified in writing by county I/M
28 program staff.

29
30 *Out-of-state exemption:* Vehicles registered in an I/M county but operated out-of-state
31 are eligible for an exemption. The owner must complete Utah State Tax Commission
32 form TC-810 in order to be registered without inspection documentation. The owner
33 must explain why the vehicle is unavailable for inspection in Utah. Common situations
34 include Utah citizens that are military personnel stationed outside of the state, students
35 attending institutions of higher education elsewhere, and people serving religious
36 assignments outside the area. If the temporary address of the owner is located within
37 another I/M program area listed on the back of the form, the owner must submit proof of
38 compliance with that I/M program at the time of, and as a condition precedent to,
39 registration or renewal of registration. The vehicle owner must identify [~~his or~~
40 ~~her~~] their anticipated date of return to the state and is required to have the vehicle
41 inspected within ten days after the vehicle is back in Utah.

42
43 *Motorist Compliance Enforcement Mechanism:* The I/M programs are registration-
44 enforced on a county-wide basis. A certificate of emissions inspection or a waiver or
45 other evidence that the vehicle is exempt from the I/M program requirements must be

1 presented at the time of, and as a condition precedent to, registration or renewal of
2 registration of a motor vehicles as specified in Section 41-6a-1642(1)(a). Owners of
3 vehicles operated without valid license plates or with expired license plates are subject to
4 ticketing by peace officers at any time. Proof of compliance consists of a current vehicle
5 registration in an I/M program area or an I/M certificate of compliance or waiver, or
6 evidence of exempt vehicle status.

7
8 *Valid registration required:* A certificate of emissions inspection or a waiver or other
9 evidence that the vehicle is exempt from the I/M program requirements must be
10 presented at the time of, and as a condition precedent to, registration or renewal of
11 registration of a motor vehicles as specified in Section 41-6a-1642 and 41-1a-203(1)(c).
12 The I/M inspection is required within two months prior to the month the registration
13 renewal is due as specified in Section 41-6a-1642(7) and 41-1a-205(2)(a). Owners of
14 vehicles operated without valid license plates or with expired license plates are subject to
15 ticketing by peace officers at any time. Registration status is also checked on a random
16 basis at roadblocks and in parking lots at various locations around the state. Per Section
17 41-1a-402, Utah license plates indicate the expiration date of the registration. Per Section
18 41-1a-1303, it is a Class C misdemeanor for a person to drive or move, or for an owner
19 knowingly to permit to be driven or moved, upon any highway any vehicle of a type that
20 is required to be registered in the state that is not registered in the state. Section 41-1a-
21 1315 specifies that it is a third degree felony to falsify evidence of title and registration.

22
23 *Change of ownership:* Vehicle owners are not able to avoid the I/M inspection program
24 by changing ownership of the vehicle. Upon change of vehicle ownership the vehicle
25 must be re-registered by the new owner. The new owner must present an emissions
26 certificate, waiver, or proof of exemption from the I/M program as a condition precedent
27 to registration⁴. The new annual registration and I/M inspection dates for the vehicle will
28 be the date of registration.

29
30 *Utah Tax Commission, and County Assessors roles:* The Utah Tax Commission Motor
31 Vehicle Division and county assessor deny applications for vehicle registration or
32 renewal of registration without submittal of a valid certificate of compliance, waiver, or
33 verified evidence of exemption. Altered or hand-written documents are not accepted. All
34 certificate data is collected by county I/M program auditors and subjected to scrutiny for
35 evidence of any improprieties.

36
37 *Database quality assurance:* The vehicle registration database is maintained and quality
38 assured by the Utah Division of Motor Vehicle (DMV). Each county I/M inspection
39 database is maintained and quality assured by the county I/M program staff. The county
40 I/M program has access to the DMV database and utilizes it for quality assurance
41 purposes. All databases are subject to regular auditing, cross-referencing, and analysis.
42 The databases are also evaluated using data obtained during roadblocks and parking lot

4 See Utah Code Section 41-6a-1642 (7) and 41-1a-205(2)(b) and (c)
Section X, Part A, page 6

1 surveys. Evidence of program effectiveness may trigger additional joint enforcement
2 activities.

3
4 *Oversight provisions:* The oversight program includes verification of exempt vehicle
5 status through inspection, data accuracy through automatic and redundant data entry for
6 most data elements, an audit trail for program documentation to ensure control and
7 tracking of enforcement documents, identification and verification of exemption-
8 triggering changes in registration data, and regular audits of I/M inspection records, I/M
9 program databases, and the DMV database.

10
11 *Enforcement staff quality assurance:* County I/M program auditors and DMV clerks
12 involved in vehicle registration are subject to regular performance audits by their
13 supervisors. All enforcement personnel (direct and indirect) involved in the motorist
14 enforcement program are subject to disciplinary action, additional training, and
15 termination for deviation from procedures. Specific provisions are outlined in the DMV
16 procedures manual which is available upon request. The county I/M audit policy
17 documents are provided in their respective part of this section.

18
19 *Quality Control:* The I/M counties maintain records regarding inspections, equipment
20 maintenance, and the required quality assurance activities. The I/M counties analyze I/M
21 program data and submit annual reports to the U.S. Environmental Protection Agency
22 and UDAQ upon request.

23
24 *Analyzer data collection:* Each county's I/M analyzer data collection system meets the
25 requirements specified under 40 CFR 51.365.

26
27 *Data analysis and reporting- Annual:* The I/M counties analyze and submit to EPA and
28 UDAQ an annual report for January through December of the previous year, which
29 includes all the data elements listed in 40 CFR Subpart S 51.366 by July of each year. If
30 a report is required earlier than annually, the counties will accommodate the request.

31
32 *General enforcement provisions:* The county I/M programs are responsible for
33 enforcement action against incompetent or dishonest stations and inspectors. Each county
34 I/M ordinance or regulation includes a penalty schedule.

35
36 *General public information:* The I/M counties have comprehensive public education and
37 protection programs, including providing strategies to educate the public on Utah's air
38 quality problems; ways that people can reduce emissions; the requirements of state and
39 federal law; the role of motor vehicles in the air quality problem; the need for and
40 benefits of a vehicle emissions inspection program; ways to operate and maintain a
41 vehicle in a low-emission condition; how to find a qualified repair technician; and the
42 requirements of the I/M program. Information is provided via county websites and direct
43 response to inquiries for information, reports, classes, pamphlets, fairs, school
44 presentations, workshops, news releases, posters, signs, and public meetings. Utah

1 Department of Environmental Quality also provides information on its website about
2 ways to operate and maintain a vehicle in a low-emission condition.

3
4 *County I/M technical centers:* Each I/M county operates an I/M technical center staffed
5 with trained auditors and capable of performing emissions tests. A major function of the
6 I/M technical centers is to serve as a referee station to resolve conflicts between permitted
7 I/M inspectors, stations, and motorists. Auditors actively protect consumers against fraud
8 and abuse by inspectors, mechanics, and others involved in the I/M program. Complaints
9 are received and investigated fully. Auditors advise motorists regarding emissions
10 warranty provisions and assist the owners in obtaining warranty covered repairs for
11 eligible vehicles. The I/M technical centers also provide motorists with information
12 regarding the I/M program, general air pollution issues, and emissions-related vehicle
13 repairs.

14
15 *Vehicle inspection report:* A vehicle inspection report (VIR) [~~is printed and~~] will be
16 [~~provided~~]issued to the motorist after each vehicle inspection. The VIR includes a public
17 awareness statement about vehicle emissions and lists additional ways that the public can
18 reduce air pollution. The test results are detailed on the VIR. Information about vehicle
19 emissions warranties and the benefits of emissions-related repairs are printed for vehicles
20 that failed the test. If the vehicle fails a retest, information about wavier requirements,
21 application procedures and the address and telephone number of the applicable I/M
22 technical center are printed on the VIR.

23
24 *Reciprocity between County I/M programs:* Utah I/M programs are conducting the same
25 test procedures and thereby agreed to recognize the validity of a certificate granted by
26 any Utah I/M program.
27

UTAH STATE IMPLEMENTATION PLAN

SECTION X

**VEHICLE INSPECTION AND
MAINTENANCE PROGRAM**

Part F

Cache County

Adopted by the Utah Air Quality Board
[November 6, 2013]

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SECTION X Part F
Cache County Emission Inspection/ Maintenance Program

APPENDICES

1. Cache County Emission Inspection/ Maintenance Program Ordinance 201~~3-04~~8-15
2. Bear River Health Department Regulation 2013-1

UTAH STATE IMPLEMENTATION PLAN
SECTION X, PART F
VEHICLE INSPECTION AND MAINTENANCE (I/M) PROGRAM

1. Applicability

Cache County I/M program requirements: Cache County was designated nonattainment for the PM_{2.5} National Ambient Air Quality Standard (NAAQS) on December 14, 2009 (74 FR 58688, November 13, 2009). Accordingly, Cache County ~~[must]~~ implemented control strategies to attain the PM_{2.5} NAAQS. A motor vehicle emission inspection and maintenance (I/M) program ~~[has been]~~ was identified by the PM_{2.5} State Implementation Plan (SIP) as a necessary control strategy to attain the PM_{2.5} NAAQS as expeditiously as practicable. Therefore, pursuant to Utah Code Annotated 41-6a-1642, Cache County ~~[must]~~ implemented an I/M program that complies with the minimum requirements of 40 CFR Part 51 Subpart S. Cache County ~~[will]~~ implemented its I/M program county-wide. This program was approved by EPA on October 9, 2015 (80 FR 54237 September 9, 2019). Parts A and F of Section X demonstrate compliance with 40 CFR Part 51 Subpart S for Cache County.

2. Description of Cache I/M Programs

Below is a summary of Cache County's I/M program. Section X, Part F Appendices 1 and 2 contain the essential documents for Cache County's I/M program.

Network Type: Cache County's I/M program will comprise of a decentralized test-and-repair network.

Test Convenience: Cache County will make every effort to ensure that its citizens will have stations conveniently located throughout Cache County. Specific operating hours are not specified by the county; however, its Regulation requires that stations be open and available to perform inspections during a major portion of normal business hours of 8:00 a.m. to 5:00 pm Mondays through Fridays.

Subject fleet: All model year 19~~[69]~~96 and newer vehicles registered or principally-operated in Cache County are subject to the I/M program except for exempt vehicles.

Station/inspector Audits: Cache County's I/M program will regularly audit all permitted I/M inspectors and stations to ensure compliance with county I/M ordinances, regulations, and policies. Particular attention will be given to identifying and correcting any fraud or incompetence with respect to vehicle emissions inspections. Compliance with recordkeeping, document security, analyzer maintenance, and program security requirements will be scrutinized. The Cache County I/M program will have an active covert compliance program to minimize potential fraudulent testing.

Waivers: Cache County's I/M program allows for the issuance of waivers under limited circumstances. The procedure for issuing waivers is specified in Cache County's I/M regulation provided in Section 9[6] of Appendix 2 of this part of the SIP and meets the minimum waiver issuance criteria specified in 40 CFR Subparts 51.360.

Test frequency: Vehicles less than six years old as of January 1 on any given year will be exempt from an emissions inspection. All model year 19[69]96 and newer vehicles are subject to a biennial test.

Test Equipment: Specifications for the I/M test procedures, standards and analyzers are described in Cache County's I/M regulation provided in Appendix 2. Specifications for the test procedure and equipment were developed according to good engineering practices to ensure test accuracy. ~~[Analyzer calibration specifications]~~ Certified testing equipment and emissions test procedures meet the minimum standards established in Appendix A of the EPA's I/M Guidance Program Requirements, 40 CFR Part 51 Subpart S.

Test Procedures:

- The following vehicles are subject to an on-board diagnostic (OBD) II inspection:
 - 1996 and newer light duty vehicles¹ and
 - 2008 and newer medium duty vehicles²
- ~~[The following vehicles are subject to a two-speed idle test that is compatible with Section VI (Preconditioned Two Speed Idle Test) in Appendix B of the EPA I/M Guidance Program Requirements, 40 CFR 51, Subpart S:~~
 - ~~1995 and older vehicles,~~
 - ~~1996 to 2007 medium and heavy duty vehicles³ and~~
 - ~~2008 and newer heavy duty vehicles.]~~

Test procedures are outlined in Appendix 2 of this part of the SIP

3. I/M SIP Implementation

The I/M program ordinance, regulations, policies, procedures, and activities specified in this I/M SIP revision shall be implemented by January 1, 20[14]21 and shall continue

¹ Light duty vehicles have a Gross Vehicle Weight of 8500 lbs or less.

² Medium duty vehicles have a Gross Vehicle Weight greater than 8500[1] lbs but less than 14,000 lbs

³ ~~Heavy Duty vehicles have a Gross Vehicle Weight greater 14,000 lbs]~~

1 until a maintenance plan without an I/M program is approved by EPA in accordance with
2 Section 175 of the Clean Air Act.
3
4

ORDINANCE 2013-04**IMPLEMENTATION OF A VEHICLE EMISSIONS AND MAINTENANCE
PROGRAM IN CACHE COUNTY****1.0 PURPOSE**

The purpose of this ordinance is to reduce air pollution levels in Cache County by requiring emission inspections of on-road motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 1.1 Protect and promote the public health, safety, and welfare;
- 1.2 Improve air quality;
- 1.3 Comply with the federal regulations contained in 40 CFR part 51 subpart S;
- 1.4 Comply with the law enacted by the Legislature of the State of Utah, Section 41-6a-1642 Utah Code Annotated, 1953, as amended.

2.0 POWERS AND DUTIES

- 2.1 The Cache County Council (hereafter, "Council") has authority to implement a vehicle inspection and maintenance program under Section 41-6a-1642, Utah Code Annotated, 1953, as amended.
- 2.2 The Council is presently required by the EPA and the State of Utah to implement a vehicle emission inspection and maintenance program.
- 2.3 The Council hereby delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River District Board of Health (hereafter "Board"), to address all issues pertaining to the adoption and administration of the vehicle emission inspection and maintenance program.
- 2.4 The Council authorizes and directs the Board to adopt and promulgate rules and regulations to ensure compliance with EPA and State Implementation Plan requirements with respect to an emission inspection and maintenance program.

3.0 GENERAL PROVISIONS

- 3.1 The Board, in conjunction with its staff, will administer and enforce this ordinance.
- 3.2 The Board shall adopt vehicle emission and inspection rules and regulations which meet EPA and State Implementation Plan requirements.

3.3 The Council shall approve the initial Rules and Regulations established by the Board and all changes in Rules and Regulations.

4.0 GUIDELINES TO BE FOLLOWED BY THE BEAR RIVER BOARD OF HEALTH IN IMPLEMENTING A VEHICLE INSPECTION AND MAINTENANCE PROGRAM IN CACHE COUNTY

4.1 Vehicles registered in Cache County, that are not exempt from inspection requirements, will be inspected on the following schedule:

4.1.1 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a GVWR 8,500 lbs or less will be subject to inspection. All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer, with a GVWR greater than 8,500 lbs and less than 14,001 lbs will be subject to inspection.

4.1.2 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer, with a GVWR less than 14,001 lbs will be subject to inspection.

4.1.3 No emissions inspection will be required for any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacture.

4.1.4 Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

4.2 A maximum fee for inspection shall be set by the Board and approved by the Council. Part of this fee will be retained by the entity which performs the test and part may be remitted to the Board as reimbursement for administering the program. The intent of the Council is that this fee be as low as possible, while still maintaining the financial viability of the program.

4.3 If a vehicle fails the emissions inspection, a waiver may be granted that will allow the vehicle to be registered that year. In order to qualify for a waiver, the vehicle owner/operator must spend a minimum of \$200.00 on emissions related repairs and meet any other requirements established by the Board. A waiver will be issued once during the lifetime of the vehicle. Any changes to the minimum required repair expenditure to qualify for the waiver shall be approved by the Council.

4.4 Emission inspections in Cache County will be conducted by private firms, or by utilizing remote OBD technology. The Board shall establish criteria to ensure that testing is performed in accordance with state and federal requirements.

- 4.5 To fund the administration of the emissions inspection and maintenance program and other air quality improvement programs, the Council authorizes an Air Pollution Control fee to be assessed upon every motorized vehicle registered in Cache County at the time of registration as provide by Section 41-1a-1223, Utah Code Annotated, 1953, amended.

4.5.1 The fee is set at \$3.00 for each vehicle registration within the County under section 41-1a-215, Utah Code Annotated, 1953, as amended and at \$2.25 for each vehicle registration within the county for a six month registration period under Section 41-1a-215.5, Utah Code, 1953, as amended.

4.5.2 Motor vehicles that are exempt from the registration fee, and commercial vehicles with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953 as amended.

4.5.3 The fee shall be assessed beginning January 1, 2014.

5.0 REVIEW OF NEED FOR PROGRAM

The Council shall review the vehicle emissions and maintenance program at least every five years to evaluate the continuing need for the program.

6.0 EFFECTIVE DATE

These changes will take effect on January 1, 2021.

This ordinance takes effect on March 27, 2013. Following its passage, but prior to the effective date, a copy of the Ordinance shall be deposited with the County Clerk and a short summary of the ordinance shall be published in a newspaper of general circulation within the County as required by law.



Regulation No. 2013-1

VEHICLE EMISSIONS INSPECTION AND MAINTENANCE PROGRAM

Adopted by the Bear River Board of Health
May 9, 2013

Updated May 27, 2015

Updated April 10, 2019

Under Authority of Section 26A-1-121
Utah Code Annotated, 1953, as amended

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1.0 DEFINITIONS

For the purpose of this Regulation, the following terms, phrases, and words shall have the following meanings, unless otherwise defined:

Alternative Fuel: A fuel that is derived from resources other than petroleum. This includes but is not limited to: natural gas, propane, ethanol, and bio-diesel.

Bi-fuel Vehicle: A vehicle that has two separate fueling systems that enables the vehicle to run on one or the other (ex. Gasoline and natural gas). These vehicles may be switchable or non-switchable.

Board: See Board of Health.

Board of Health: The Bear River Board of Health.

Cache County Council: The elected Cache County Council representatives.

Certificate of Compliance: Proof that a vehicle meets all applicable requirements of the I/M Program. This proof may be sent in an electronic format to the Utah State Tax Commission.

Certification: Assurance by an authorized source, whether it be a laboratory, the manufacturer, the State, or the Department, that a specific product or statement is in fact true and meets all required requirements.

Certified Emissions Inspector: A person who has successfully completed all certification requirements and has been issued a current, valid Certified Emissions Inspector Certification by the Department.

Certified Testing Equipment: An official test instrument that has been approved by the Department to test motor vehicles for compliance with this Regulation.

Compliance: Verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meets all required accreditation requirements.

Compliance Assurance Inspection: A more detailed emissions inspection performed at the I/M Technical Center. Details of this inspection are found in Appendix D, Test Procedures.

Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list, as required in Section 6.8 and Appendix D, Test Procedures, shall be inspected at the I/M Technical Center.

Contractor: The emission inspection system contractor selected by the Department to provide specialized services related to the I/M Program in Cache County.

Council: See Cache County Council.

County: Cache County, Utah.

Department: The Bear River Health Department.

Director: The Director of the Bear River Health Department or his authorized representative.

DLC: Data Link Connector used in OBD applications is a 16 pin connector used by scan tools and other emission diagnostic equipment to communicate with the vehicle's computer for the purpose of collecting emissions related data.

DTC: Diagnostic Trouble Code is a standardized 5 digit code that is used to identify a specific fault that has occurred or is occurring in a vehicle.

Dual Fuel Vehicle: See Flexible Fuel Vehicle.

Emissions Control Systems: Parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the sole or primary purpose of reducing emissions.

EPA: The United States Environmental Protection Agency.

Flexible Fuel Vehicle: Also called Flex-Fuel Vehicle. A vehicle that is designed to run on more than one fuel, usually gasoline blended with ethanol (0-85%), and both fuels are stored in the same common tank.

I/M Program: See Vehicle Emissions Inspection and Maintenance Program.

I/M Program Station: A stationary Vehicle Emissions Inspection and Maintenance Station that qualifies and has a valid permit, issued by the Department, to operate as an emissions inspection and maintenance station in the I/M Program.

I/M Technical Center: A facility operated by the Department for technical or administrative support of the I/M Program.

Inspection: An official vehicle emissions test performed for the purpose of issuing a Certificate of Compliance or Waiver.

Inspector: A Certified Emissions Inspector.

MIL: Malfunction Indicator Light is an indicator located on the instrument panel that notifies the operator of an emissions fault.

Motor Vehicle: A self-propelled motorized vehicle with an internal combustion powered engine which is licensed for operation on public roads and/or streets. Motor Vehicles exempted from the inspection requirements of this Regulation are listed in Section 6.4 of this Regulation.

Non-certified Inspector: Any person who has not been certified by the Department to perform official emissions tests.

OBD: On Board Diagnostic refers to a vehicle's monitoring and diagnostic capabilities of its emissions systems.

Publicly-owned Vehicles: A motor vehicle owned by a government entity, including but not limited to the federal government or any agency thereof, the State of Utah or any agency or political subdivision thereof.

Readiness: Readiness is used to identify the state of a vehicle's emissions monitors as they are tested. Readiness does not indicate whether the monitors passed or failed the test, it only indicates whether or not the test has been run for any particular monitor.

Referee Inspection: An emissions inspection performed at the I/M Technical Center for the purpose of resolving disputes or overriding inspection criteria for cause.

Regulation: A regulation of the Bear River Health Department for a vehicle emissions inspection and maintenance program.

Rejection: A condition where a vehicle subject to an OBD inspection has not met the Readiness requirements as set forth by this Regulation. The vehicle has not failed the inspection but it must be driven additional miles until Readiness monitors are set "ready" or repairs have been made allowing readiness flags to set ready.

Station: An I/M Program Station.

Training Program: A formal program administered, conducted, or approved by the Department for the education of emission inspectors in basic emission control technology, inspection procedures, I/M Program policies, procedures, and this Regulation.

Vehicle Emission Control Information Label (VECI Label): An EPA required label found on a vehicle that contains the manufacturer's name and trademark, and an unconditional statement of compliance with EPA emission regulations. The label often contains a list of emissions control devices found on the vehicle.

Vehicle Emissions Inspection and Maintenance Program: The program established by the Department pursuant to Section 41-6a-1642 Utah Code Annotated, 1953, as amended, and Cache County Code Chapter 10.20.

Waiver: Documentation of proof that a vehicle which has not been able to meet applicable test requirements, has met the applicable repair and/or adjustment requirements of Section 9.5 of this Regulation.

2.0 PURPOSE

It is the purpose of this Regulation to reduce air pollution levels in Cache County by requiring inspections of in-use motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 2.1 Protect and promote the public health, safety, and welfare;
- 2.2 Improve air quality;
- 2.3 Comply with the applicable federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S;
- 2.4 Comply with the law enacted by the Legislature of the State of Utah, Sections 41-6a-1642 Utah Code Annotated, 1953, as amended; and
- 2.5 Comply with Cache County Code Chapter 10.20, Vehicle Emissions and Maintenance Program, as amended.

3.0 AUTHORITY AND JURISDICTION OF THE DEPARTMENT

3.1 Under Chapter 10.20.020(C) of Cache County Code, the Cache County Council (hereafter, Council) delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River Board of Health (hereafter Board), to address all issues pertaining to the adoption and administration of the Vehicle Emissions Inspection and Maintenance Program (hereafter I/M Program).

3.2 Under Chapter 10.20.020(D) of Cache County Code, the Council directs the Board to adopt and promulgate regulations to ensure compliance with State Implementation Plan requirements with respect to an I/M Program.

3.3 The Board is authorized to make standards and regulations pursuant to Section 26A-1-121(1) of the Utah Code Annotated, 1953, as amended.

3.4 The Board is authorized to establish and collect fees pursuant to Section 26A-1-114(1)(h)(i) of the Utah Code Annotated, 1953, as amended.

3.5 All aspects of the I/M Program within Cache County enumerated in Section 2.0 of this Regulation shall be subject to the direction and control of the Bear River Health Department (hereafter Department).

4.0 POWERS AND DUTIES

4.1 The Department shall be responsible for the enforcement and administration of this Regulation and any other powers vested in it by law and shall:

4.1.1 Make policies and procedures necessary to ensure that the provisions of this Regulation are met and that the purposes of this Regulation are accomplished;

4.1.2 Require the submission of information, reports, plans, and specifications from I/M Program Stations as necessary to implement the provisions, requirements, and standards of this Regulation;

4.1.3 Issue permits, certifications, and charge fees as necessary to implement the provisions, requirements, and standards of this Regulation; and

4.1.4 Perform audits of any I/M Program Station, issue orders and/or notices, hold hearings, and levy administrative penalties, as necessary to effect the purposes of this Regulation.

4.2 The Department may suspend, revoke, or deny a permit, subject to the Penalty Schedule in Appendix C, of an I/M Program Station and/or require the surrender of the permit of such I/M Program Station upon showing that:

4.2.1 A vehicle was inspected and issued a Certificate of Compliance by the station personnel that did not, at the time of inspection, comply with all applicable policies, procedures, and this Regulation;

4.2.2 A vehicle was inspected and failed by the I/M Program Station when, in fact, the vehicle was determined by the Department to be in such condition that it did comply with the requirements of this Regulation;

4.2.3 The I/M Program Station has violated any provisions of this Regulation, or any rule, regulation, or Department policy properly promulgated for the operation of an I/M Program Station;

4.2.4 The I/M Program Station is not operating from a location specified on the permit;

4.2.5 An official inspection was done by a Non-certified Inspector or a Non-certified Inspector has gained access to the official testing portion of the Certified Testing Equipment;

4.2.6 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment did not perform the inspection;

4.2.7 The Certified Testing Equipment has been tampered with or altered in any way contrary to the certification and maintenance requirements of the Certified Testing Equipment;

4.2.8 The I/M Program Station denies access to a representative of the Department to conduct an audit or other necessary business during regular business hours;

4.2.9 The I/M fee has been determined by the Department to be discriminatory in that different fees are assessed dependent upon vehicle ownership, vehicle make or model, owner residence, etc; or

4.2.10 The I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.3 The Department may suspend, revoke, or deny the certificate of a Certified Emissions Inspector, subject to the Penalty Schedule in Appendix C, and require the surrender of this certificate upon showing that:

4.3.1 The Certified Emissions Inspector caused a Certificate of Compliance to be issued without an approved inspection being made;

4.3.2 The Certified Emissions Inspector denied the issuance of a Certificate of Compliance to a vehicle that, at the time of inspection, complied with the law for issuance of said certificate;

4.3.3 The Certified Emissions Inspector issued a Certificate of Compliance to a vehicle that, at the time of issuance, was in such a condition that it did not comply with this Regulation;

4.3.4 Inspections were performed by the Certified Emissions Inspector, but not in accordance with applicable policies, procedures, and this Regulation;

4.3.5 The Certified Emissions Inspector allowed a Non-certified Inspector to perform an official Inspection or gain access to the official testing portion of the Certified Testing Equipment;

4.3.6 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment did not perform the inspection;

4.3.7 The Certified Emissions Inspector signed an inspection form or certificate stating that he had performed the emissions test when, in fact, he did not; or

4.3.8 The Certified Emissions Inspector employed at an I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.4 The Department shall respond, according to the policies and procedures of the Department, to public complaints regarding the fairness and integrity of the inspections they receive and shall provide a method that inspection results may be challenged if there is a reason to believe them to be inaccurate.

5.0 SCOPE

It shall be unlawful for any person to fail to comply with any policy, procedure, or regulation promulgated by the Department, unless expressly waived by this Regulation.

6.0 GENERAL PROVISIONS

Subject to the exceptions in Section 6.4 and pursuant to the schedule in Section 6.1, motor vehicles that are registered in Cache County, or principally operated within Cache County shall be subject to an emission inspection. Owners of vehicles that meet the requirements of Section 6.2 or 6.3 shall comply with the inspection requirements regardless of the county of registration.

6.1 Motor vehicles are subject to a biennial emissions inspection. Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

6.1.1 A Certificate of Compliance, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions

precedent to registration or renewal of registration of a motor vehicle in odd-numbered years for a vehicle with an odd-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 14 of this Regulation.

6.1.2 A Certificate of Compliance, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in even-numbered years for a vehicle with an even-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 14 of this Regulation.

6.1.3 The Air Pollution Control Fee shall be paid annually, as per Chapter 10.20.040(E) of Cache County Code, (see also Section 6.7 of this Regulation) as conditions precedent to registration or renewal of registration of a motor vehicle.

6.1.4 A Certificate of Compliance shall be valid for a period of time in accordance with Section 41-6a-1642(10) Utah Code Annotated, 1953, as amended.

6.2 Publicly-Owned Vehicles. Owners of publicly-owned vehicles shall comply with the inspection program requirements. Federally-owned vehicles and vehicles of employees operated on a federal installation that do not require registration in the State of Utah shall comply with the emissions testing requirements.

6.3 Vehicles of employees and/or students parked at a college or university that do not require registration in Cache County shall comply with the emissions testing requirements as authorized by 41-6a-1642(5)(a) Utah Code Annotated, 1953, as amended.

6.3.1 College or university parking areas that are metered or for which payment is required per use are not subject to the requirements in Section 6.3.

6.4 Vehicle Exemption. The following vehicles are exempt from these emissions testing requirements:

6.4.1 An implement of husbandry as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended;

6.4.2 A motor vehicle that meets the definition of a farm truck as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended, and has a gross vehicle weight rating of 12,001 pounds or more;

6.4.3 A vintage vehicle as defined in Section 41-21-1 Utah Code Annotated, 1953, as amended;

6.4.4 A custom vehicle as defined in Section 41-6a-1507 Utah Code Annotated, 1953, as amended;

6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;

6.4.6 A motorcycle as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended;

6.4.7 A motor vehicle powered solely by electric power;

6.4.8 Any gasoline or non-diesel based Alternative Fuel powered vehicle of model year 1995 or older;

6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;

6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;

6.4.11 Any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacturer;

6.4.12 Any diesel or diesel based Alternative Fuel powered vehicle 1997 and older;

6.4.13 Any diesel or diesel based Alternative Fuel powered vehicle with a gross vehicle weight rating greater than 14,000 pounds; and

6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended.

6.5 If a vehicle exempted by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official Inspection it shall be the responsibility of the Certified Emissions Inspector to inform the owner/operator of the vehicle that the vehicle is not required to have an official Inspection.

6.6 Official Signs.

6.6.1 All I/M Program Stations shall display in a conspicuous location on the premises an official sign provided and approved by the Department;

6.6.2 The readiness requirements for an OBD test as referenced in Appendix D shall be posted in a conspicuous place on the station's premises;

6.6.3 The station shall post on a clear and legible sign and in a conspicuous place at the station, the fees charged by that station for the performance of the emissions inspection;

6.6.4 The free re-inspection policy as referenced in Section 9.4 shall be posted in a conspicuous place on the station's premises;

6.6.5 The signs required by Sections 6.6.1 through 6.6.4 shall be located so as to be easily in the public view.

6.7 Fees.

6.7.1 The fees assessed upon I/M Program Stations and Certified Emissions Inspectors shall be determined according to a fee schedule adopted by the Board. The fee schedule is referenced in Appendix A to this Regulation and may be amended by the Board as necessary.

6.7.2 An Air Pollution Control Fee is hereby assessed upon every motor vehicle registered in Cache County as per Chapter 10.20.040 of Cache County Code. The fee will be assessed annually at the time of registration of the vehicle.

6.7.2.1 This fee assessment is included upon all motorized vehicles including those that are exempted from the inspection requirements of this Regulation by Section 6.4.

6.7.2.2 A motor vehicle that is exempt from the registration fee, and a commercial vehicle with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953, as amended and Chapter 10.20.040 of Cache County Code.

6.7.3 I/M Program Stations may charge a fee for the required service. The fee may not exceed, for each vehicle inspected, the amount set by the Board and referenced in Appendix A of this Regulation.

6.7.3.1 The inspection fee pays for a complete inspection leading to a Certificate of Compliance, a Rejection, or a failure. If a vehicle fails, or is rejected from an inspection, the owner/operator is entitled to one free re-inspection if he returns to the I/M Program Station that performed the original inspection within fifteen (15) calendar days from

the date of the initial inspection. The I/M Program Station shall extend the fifteen day free re-inspection to accommodate the vehicle owner/operator if the I/M Program Station is unable to schedule the retest of the vehicle within the fifteen day time period. The inspection fee shall be the same whether the vehicle passes or fails the emission test.

6.7.4 If a vehicle fails the inspection and is within the time and mileage requirements of the federal emissions warranty contained in section 207 of the Federal Clean Air Act, the Certified Emissions Inspector shall inform the owner/operator that he may qualify for warranty coverage of emission related repairs as provided by the vehicle manufacturer and mandated by the Federal Environmental Protection Agency (see 40 CFR Part 85, Subpart V).

6.8 Compliance Assurance List.

6.8.1 The Department reserves the right to recall a vehicle and perform a Compliance Assurance Inspection at the I/M Technical Center for the following reasons:

6.8.1.1 Suspected fraudulent registration;

6.8.1.2 Suspected fraudulent emissions inspection;

6.8.1.3 Suspected tampering of emissions control devices;

6.8.1.4 Violations of Section 41-6a-1626, Utah Code Annotated, 1953, as amended, regarding visible emissions; and

6.8.1.5 Any item listed in Appendix D, Test Procedures, that cause the vehicle to be flagged during an emissions inspection.

6.8.2 The Department shall create and maintain a list of vehicles that are subject to a Compliance Assurance Inspection at the I/M Technical Center.

6.8.2.1 The Compliance Assurance Inspection criteria listed in Appendix D, Test Procedures, shall be followed.

6.8.2.2 A vehicle that passes the Compliance Assurance Inspection may be removed from the Compliance Assurance List by Department personnel.

6.8.2.3 A vehicle that fails the Compliance Assurance Inspection may be subject to penalties as described in Section 14 of this regulation.

7.0 PERMIT REQUIREMENTS OF THE VEHICLE EMISSIONS I/M PROGRAM STATION

7.1 Permit Required.

7.1.1 No person shall in any way represent any place as an official I/M Program Station unless the station is operated under a valid permit issued by the Department.

7.1.2 The Department is authorized to issue or deny permits for I/M Program Stations.

7.1.3 No permit for any official I/M Program Station may be assigned, transferred, or used by any person other than the original owner identified on the permit application for that specific I/M Program Station.

7.1.4 The permit shall be posted in a conspicuous place within public view on the premises.

7.1.5 Application for an I/M Program Station permit shall be made to the Department upon a form provided by the Department. No permit shall be issued unless the Department finds that the facilities, and equipment of the applicant comply with the requirements of this Regulation and that competent personnel, certified under the provisions of Section 8.0, are employed and will be available to make inspections, and the operation thereof will be properly conducted in accordance with this Regulation.

7.1.5.1 An I/M Program Station shall notify the Department and cease any emission testing if the station does not have a Certified Emissions Inspector employed.

7.1.5.2 An I/M Program Station shall notify the Department upon termination and/or resignation of any Certified Emissions Inspector employed by the station.

7.1.5.3 An I/M Program Station shall comply with all the terms stated in the permit application and all the requirements of this Regulation.

7.1.5.4 An I/M Program Station shall provide a dedicated internet connection for the Certified Testing Equipment. A wireless internet connection may be required by the Contractor.

7.2 Permit Duration and Renewal

7.2.1 The permit for I/M Program Stations shall be issued annually and shall expire on the last day of the month, one year from the month of issue. The permit shall be renewable sixty days prior to the date of expiration.

7.2.2 It is the responsibility of the owner/operator of the I/M Program Station to pursue the permit renewal through appropriate channels.

7.3 I/M Program Station to hold Department Harmless

7.3.1 In making application for a permit or for its renewal, such action shall constitute a declaration by the applicant that the Department shall be held harmless from liability incurred due to action or inaction of I/M Program Station's owners or their employees.

7.4 An I/M Program Station shall be kept in good repair and in a safe condition for inspection purposes free of obstructions and hazards.

8.0 TRAINING AND CERTIFICATION OF INSPECTORS

8.1 Certified Emissions Inspector Certification Required.

8.1.1 No person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.

8.1.2 Applications for a Certified Emissions Inspector Certification shall be made upon an application form prescribed by the Department. No certification shall be issued unless:

8.1.2.1 The applicant has shown adequate competence by successfully completing all portions of the Certified Emissions Inspector Certification requirements as specified in this Regulation; and

8.1.2.2 The applicant has paid the required permit fees as set by the Board and referenced in Appendix A of this Regulation.

8.1.3 An applicant shall comply with all of the terms stated in the application and with all the requirements of this Regulation.

8.1.4 An applicant shall complete a Department approved training course and shall demonstrate knowledge and skill in the performance of emission testing and

use of the Certified Testing Equipment. Such knowledge and skill shall be shown by passing at minimum:

- 8.1.4.1 Operation and purposes of emission control systems;
- 8.1.4.2 Inspection procedures as outlined in this Regulation and prompted by the Certified Testing Equipment ;
- 8.1.4.3 Operation of the Certified Testing Equipment;
- 8.1.4.4 The provisions of Section 207(b) warranty provisions of the Federal Clean Air Act, and other federal warranties;
- 8.1.4.5 The provisions of this Regulation and other applicable Department policies and procedures; and
- 8.1.4.6 A performance qualification test including but not limited to the following:
 - (a) Demonstration of skill in proper use, care, and maintenance, of the Certified Testing Equipment;
 - (b) Demonstration of ability to conduct the inspection; and
 - (c) Demonstration of ability to accurately enter data in the Certified Testing Equipment.

8.1.5 The Department shall issue a Certified Emissions Inspector Certificate to an applicant upon successful completion of the requirements of this section.

8.1.6 The Certified Emissions Inspector Certificates are and remain the property of the Department, only their use and the license they represent is tendered.

8.1.7 Certified Emissions Inspector Certifications shall not be transferred from one person to another person.

8.2 Recertification Requirements for Certified Emissions Inspectors

8.2.1 The Department may renew certifications for an existing Certified Emissions Inspector after a properly completed renewal form is submitted, reviewed, and approved, the recertification requirements have been completed, the fees are paid and the Certified Emissions Inspector has complied with this Regulation.

8.2.2 Certified Emissions Inspectors shall be required to recertify annually. Failure to recertify shall result in suspension or revocation of the Certification as described in this Regulation.

8.2.3 Certified Emissions Inspectors shall complete a Department approved refresher course every 2 years. Applicants for recertification shall complete a Department approved refresher course no more than sixty days prior to the date of expiration.

8.3 Certification Expiration

8.3.1 The Certified Emissions Inspector Certification shall be issued annually and shall expire on the last day of the month one year from the month of issue. The certification shall be renewable sixty days prior to the date of expiration.

8.3.2 It is the responsibility of the Certified Emissions Inspector to pursue the renewal of the Certification.

8.4 Certified Emissions Inspector Certification Denial, Suspension and Revocation

8.4.1 Certified Emissions Inspector Certifications may be suspended or revoked by the Department for violations of this Regulation.

8.4.2 Suspension or revocation of Certified Emissions Inspector Certifications shall follow the provisions of Appendix C of this Regulation.

8.4.3 The Department may deny issuance of a Certified Emissions Inspector Certification to an individual that works as an emissions inspector in another county in Utah and is currently under suspension or revocation in that program.

9.0 INSPECTION PROCEDURE

9.1 The official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures, as referenced in this section and Appendix D, Test Procedures, are to be followed.

9.2 A complete official test must be performed any time an inspection is requested. The Certified Emissions Inspector shall not perform any part of the inspection without initiating an official test on the Certified Testing Equipment.

9.3 The Certified Emissions Inspector shall perform the official vehicle emissions test using the proper testing procedure.

9.3.1 All gasoline, and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a gross vehicle weight rating 8,500 pounds or less, shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.3.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a gross vehicle weight rating greater than 8,500 pounds and less than 14,001 pounds shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.3.3 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer with a gross vehicle weight rating less than 14,001 pounds shall be tested as specified in Appendix D, Diesel Test Procedures, unless specifically exempted by this Regulation.

9.4 Retesting Procedures

9.4.1 If the vehicle fails the initial emissions inspection, the owner/operator shall have fifteen calendar days in which to have repairs or adjustments made and return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection.

9.4.2 If the vehicle is Rejected from the initial emissions inspection for failure to complete Readiness requirements, the owner/operator shall have fifteen calendar days in which to return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection.

9.4.3 If the vehicle owner/operator does not return to the I/M Program Station that performed the initial inspection within fifteen calendar days the I/M Program Station is under no obligation to offer a free re-inspection.

9.5 Waivers

9.5.1 A Waiver may be granted and a Certificate of Compliance issued for 1996 and newer model year vehicles if all of the following requirements are met:

9.5.1.1 Air pollution control devices identified in the VECI Label are in place and apparently operable on the vehicle. If the VECI Label is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. If the devices have been removed

or rendered inoperable, they shall be replaced or repaired before a Waiver is granted;

9.5.1.2 The vehicle continues to fail the inspection after \$200.00 has been spent on acceptable emissions related repair costs for that specific vehicle, and proof of repair costs for that specific vehicle have been provided to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made at a repair station that employs individuals with current ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00;

9.5.1.3 The vehicle is not within the time and mileage requirements of the federal emissions warranties. Any vehicle that is within time and mileage requirements of the federal emissions warranties shall not be eligible for a Waiver, but shall be repaired to pass the testing requirements; and

9.5.1.4 A vehicle that is Rejected from the OBD Inspection may qualify for a Waiver if it meets requirements set forth in Appendix F, Waivers for "Not Ready" Vehicles.

9.5.2 As used in 9.5.1, acceptable emissions related repairs:

9.5.2.1 May include repairs performed up to 60 days prior to the official emissions test, provided appropriate documentation is supplied to the Department;

Diagnostic work performed, including Diagnostic Trouble Codes if applicable, must be properly documented to justify any repairs performed;

9.5.2.2 Does not include the fee paid for the test;

9.5.2.3 Does not include costs associated with the repairs or replacements of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, replacement, or repair is due to disconnection of, tampering with, or abuse of the emissions control systems;

- 9.5.2.4 Refers to repairs, maintenance, and diagnostic evaluations done in accordance with manufacturer's specifications, to the extent that the purpose is to reduce emissions;
- 9.5.2.5 Repairs performed on OBD compliant vehicles should be directly related to the diagnostic trouble codes identified by the vehicle and by further diagnostic tests on the vehicle;
- 9.5.2.6 Does not include parts replaced on OBD compliant vehicles that cannot be justified through diagnostic trouble codes or further diagnostic tests on the vehicle.

9.5.3 A Waiver shall only be issued by the Department. A Waiver shall only be issued after determining that the vehicle complies with the requirements of this Section.

9.5.4 A Waiver shall only be issued once to any vehicle that qualifies, throughout the lifetime of the vehicle.

9.5.5 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Waiver.

9.6 The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA, the Board, and the Council to seek approval to incorporate the new technology as a testing method.

10.0 ENGINE SWITCHING

10.1 Engine switching shall be allowed only in accordance with EPA policy, as detailed in EPA's Engine Switching Fact Sheet, dated March 13, 1991, and EPA's Addendum to Mobile Source Enforcement Memorandum 1A, dated September 4, 1997.

10.2 Vehicles subject to an emissions inspection, as referenced in Section 6.0 of this Regulation, that do not meet the requirements of Section 10.1 shall be deemed as tampered and are not eligible for a Waiver, unless they are restored to the original engine and emission control configuration.

11.0 SPECIFICATIONS FOR CERTIFIED TESTING EQUIPMENT

11.1 Approval of Certified Testing Equipment

11.1.1 Certified Testing Equipment shall meet the specifications as detailed in Appendix E.

11.1.2 It shall be illegal for any person to modify the hardware or software of Certified Testing Equipment without approval by the Department and/or Contractor.

11.1.3 It shall be illegal for any person to gain access to any Department or Contractor controlled portions of Certified Testing Equipment without approval by the Department and/or Contractor.

12.0 QUALITY ASSURANCE

12.1 A quarterly inspection shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. During the time of the inspection by the Department, the Department's representative shall have exclusive access to the Certified Testing Equipment. Inspections may be performed utilizing technology integrated into the Certified Testing Equipment.

12.2 An annual covert inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station.

12.3 The Department may increase the frequency of inspections for I/M Program Stations and/or Certified Emissions Inspectors if the Department receives information of a violation of this Regulation.

12.4 The Department shall regularly monitor I/M Program Stations and/or Certified Emissions Inspectors through inspection records and/or technology integrated into the Certified Testing Equipment.

13.0 DISCIPLINARY PENALTIES AND RIGHT TO APPEAL

13.1 When the Department, or its representative(s), receives information of a violation of any regulation contained herein which may result in a permit denial, revocation, or suspension, the Department shall notify the affected entity, in writing, informing the entity of the violation and penalties to be enforced. The affected entity may request a hearing within ten calendar days of the Department giving notice of the potential permit denial, revocation, or suspension. Only a written request for a hearing shall be honored by the Department. No appeal may be made on a formal warning.

13.1.1 In considering the appropriate administrative action to be taken as indicated in Appendix C, the Director shall consider the following:

- 13.1.1.1 whether the violation was unintentional or careless;
- 13.1.1.2 the frequency of the violation or violations;
- 13.1.1.3 the inspection and covert inspection history of the I/M Program Station and the Certified Emissions Inspector;
- 13.1.1.4 whether the fault lies with the I/M Program Station or the Certified Emissions Inspector.

13.1.2 After consideration of the factors in Section 13.1.1 the Director may take appropriate administrative action as indicated in Appendix C against either the I/M Program Station, the Certified Emissions Inspector, or both.

13.2 Appeals Hearing Procedure:

13.2.1 An appeals hearing shall be held at the request of the affected entity in order to determine the accuracy of information obtained by the Department and whether there are mitigating factors which would justify a reduction of the imposed penalties.

13.2.2 The requesting party may bring to the hearing any witnesses and any evidence believed to be pertinent to the disciplinary action.

13.2.3 The appeal shall be heard by the Vehicle Inspection and Maintenance Appeal Board, hereafter I/M Board, consisting of at least three persons, who are not employees of Bear River Health Department, appointed by the Board. The I/M Board shall have the discretion to determine which witnesses shall be heard and what evidence is relevant.

13.2.4 Violations determined to be intentional or flagrant shall result in the maximum enforcement of the penalty schedule pursuant to Appendix C.

13.2.5 In considering whether to reduce a penalty indicated by Appendix C, the I/M Board and the Department shall consider the following:

- 13.2.5.1 whether the violation was unintentional or careless;
- 13.2.5.2 the frequency of the violation or violations;
- 13.2.5.3 the inspection and covert inspection history of the I/M Program Station and the Certified Emissions Inspector;

- 13.2.5.4 whether the fault lies with the I/M Program Station, the Certified Emissions Inspector, or both.

13.3 Written notice of the final determination of the I/M Board, including the I/M Board's finding under Section 14.2.5, shall be made within ten calendar days after the conclusion of the appeals hearing.

14.0 PENALTY

14.1 Any person who is found guilty of violating any of the provisions of this Regulation, either by failing to do those acts required herein or by doing a prohibited act, shall be guilty of a class B misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended. If a person is found guilty of a subsequent similar violation within two years, he shall be guilty of a class A misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

14.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.

14.3 The Cache County Attorney's Office may initiate legal action, civil or criminal, requested by the Department to abate any condition that exists in violation of this Regulation.

14.4 In addition to other penalties imposed by a court of competent jurisdictions, any person(s) found guilty of violating any of this Regulation shall be liable for all expenses incurred by the Department.

14.5 A Penalty Schedule for permit warning, suspension, or revocation is adopted as Appendix C and may be amended by the Board as the Board deems necessary to accomplish the purposes of this Regulation.

14.6 The Department shall request that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle's registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.

15.0 SEVERABILITY

If any provision, clause, sentence, or paragraph of this Regulation or the application thereof to any person or circumstances shall be held to be invalid, such invalidity shall not affect the other provisions or applications of this Regulation. The valid part of any clause, sentence, or paragraph of this Regulation shall be given independence from the invalid provisions or application and to this end the provisions of this Regulation are hereby declared to be severable.


16.0 EFFECTIVE DATE

This Regulation shall become effective on January 1, 2021 as adopted by the Bear River Board of Health.

Approved and Adopted this 10th day of April, 2019.



James Swink, Chair
Bear River Board of Health



Lloyd Berentzen, M.B.A.
Executive Director
Bear River Health Department

APPENDIX A – FEE SCHEDULE

Permitting of an official I/M Program Station	\$250.00
Annual Renewal of I/M Program Station	\$50.00
Expired I/M Program Station Renewal	\$75.00
I/M Program Station Re-location	\$75.00
Permitting of a Certified Emissions Inspector	\$25.00
Renewal of Certified Emissions Inspector	\$15.00
Expired Certified Emissions Inspector Renewal	\$25.00
Official Station Sign	Cost
APC Fee for 12 month registration	\$3.00
APC Fee for 6 month registration	\$2.25
Emissions Inspection Fee – OBD Test	\$15.00
Emissions Inspection Fee –Tampering	\$20.00

APPENDIX B - RESERVED

APPENDIX C – PENALTY SCHEDULE

Violation (resets after 2 years of no similar violations unless revoked)	1st Occurrence	2nd Occurrence	3rd Occurrence	4th Occurrence
Failure to inspect or substituting a vehicle other than the vehicle on the test record – Registering a failing vehicle <i>(intentional pass)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Passing a failing vehicle or recording pass for tampering on a tampered vehicle <i>(gross negligence)</i>	Tech: 30 day suspension and mandatory retraining	Tech: 60 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years	
	Station: 15 day suspension	Station: 30 day suspension	Station: 60 day suspension	Station: Revocation of permit for up to 5 years
Falsifying an inspection record or emissions certificate or Failing a passing vehicle <i>(intentional)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Non-certified person performing test – Using another inspector's access <i>(gross negligence table)</i>	Tech: 60 day suspension	Tech: 180 day suspension	Tech: Revocation of permit for up to 5 years	
	Station: 60 day suspension	Station: 180 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Inaccurate or incomplete data entry <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years
Failure to follow proper test procedures – Other regulation violations <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years

APPENDIX D – TEST PROCEDURES

OBDII Test Procedures for gasoline and non-diesel based Alternative Fuel powered vehicles

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)

- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the screen prompts until the test is complete.

- 5 For 1996-2000 model year vehicles two (2) supported readiness monitors are allowed to be “not ready”. For 2001 and newer vehicles one (1) supported readiness monitor is allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.
 - 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.

- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.
- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, and/or oxygen sensor;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The presence of an OBD VIN in a vehicle that does not support OBD VINs;
 - 9.7 The absence of an OBD VIN in a vehicle that supports OBD VINs; or
 - 9.8 A change in PID count since the last inspection.
- 10 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 11 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures

All diesel powered vehicles 2007 and newer, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.
- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.
 - 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
 - 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.
- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the screen prompts until the test is complete.
- 5 Two supported readiness monitors are allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.
 - 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.
- 6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

- 7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.
- 8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:
 - 9.1 Mismatch between entered VIN and OBD VIN;
 - 9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, NMHC, and/or NOx/SCR;
 - 9.3 A change in supported readiness monitors since the last inspection;
 - 9.4 A change in communication protocol since the last inspection;
 - 9.5 A change in OBD VIN since the last inspection;
 - 9.6 The absence of an OBD VIN; or
 - 9.7 A change in PID count since the last inspection.
- 10 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 11 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.
- 12 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

All diesel powered vehicles 1998-2006, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:
 - 1.1 Vehicle Identification Number (VIN)
 - 1.2 Gross Vehicle Weight Rating (GVWR)
 - 1.3 Model year
 - 1.4 Make
 - 1.5 Model
 - 1.6 Fuel Type
 - 1.7 Engine size
 - 1.8 Number of cylinders
 - 1.9 Certification standard (EPA or California)
- 2 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
- 3 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.
- 4 If the OBDII System is identified on the VECI label, the procedure in Section 2 through 5 shall be followed.
 - 4.1 An inspection of the OBDII System shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

Compliance Assurance Inspection

- 1 A vehicle that is referred to the I/M Technical Center for a Compliance Assurance Inspection shall be subject to an official emissions inspection. A visual anti-tampering inspection shall also be included in every Compliance Assurance Inspection. The air pollution control devices listed in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the VECI label is missing, reference material may be used to identify the air pollution control devices required for the vehicle.
 - 1.1 A vehicle that has missing or tampered air pollution control devices will fail the Compliance Assurance Inspection and will not be issued a Certificate of Compliance.
 - 1.2 A vehicle that has missing or tampered air pollution control devices and has already been issued a Certificate of Compliance will be required to replace or repair the devices. Owners/operators of vehicles that do not comply will be subject to the penalties in this Regulation.
- 2 The Department will use data obtained by the Utah Division of Motor Vehicles and inspection data to determine if a vehicle should be subject to a Compliance Assurance Inspection.
- 3 The owner/operator of a vehicle subject to a Compliance Assurance Inspection will be notified in writing of the requirement to present the vehicle for inspection.

Referee Inspection

- 1 Vehicles may be referred to the I/M Technical Center for a Referee Inspection. During a Referee Inspection the Department may override the normal testing criteria and issue a Certificate of Compliance for the following reasons:
 - 1.1 The vehicle will not communicate with the Certified Testing Equipment but will communicate with other scan tools. The vehicle must meet all other testing requirements including readiness status and MIL status; or
 - 1.2 The vehicle has met the criteria to be issued a Waiver.
- 2 A Referee Inspection may also be performed when an owner/operator believes the emissions inspection performed at an I/M Program Station was not done correctly.

APPENDIX E – CERTIFIED TESTING EQUIPMENT STANDARDS

1 General

This appendix contains specifications for Contractors to design Certified Testing Equipment to be used in the Cache County I/M Program.

1.1 Design Goals

Certified Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment. The software must be designed for maximum operational simplicity. The software must prevent users from clearing Diagnostic Trouble Codes (DTC), changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Certified Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data.

These technical specifications contain the minimum requirements for Certified Testing Equipment used to perform official emissions inspections in Cache County, UT.

1.2 Manuals

All Certified Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial startup instructions. The manual may be provided in electronic format and shall be accessible from the Certified Testing Equipment.

1.3 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Certified Testing Equipment.

The Contractor shall provide a minimum of one-year warranty coverage on each unit of Certified Testing Equipment sold or leased. The one-year warranty coverage shall begin on the date of purchase and shall be included in the unit pricing for the Certified Testing Equipment. An extended warranty shall be made available to the I/M Program Stations that purchase or lease Certified Testing Equipment.

1.4 Contractor Provided Services

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Certified Testing Equipment:

- Delivery, set-up, and verification of proper functionality of the Certified Testing Equipment; and
- Training on the use and maintenance of the Certified Testing Equipment.

The Contractor shall provide the following services to the I/M Program Station during the initial one-year warranty coverage period and thereafter to any I/M Program Station that purchases an extended warranty:

- Full system support and repair as detailed in the warranty coverage agreement; and
- Appropriate service response, either on-site or remote, by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, and national/state holidays (New Year's Day, Human Rights Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), of a request from the I/M Program Station. All system repairs, component replacements, and/or Certified Testing Equipment adjustments must be accomplished within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Certified Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.5 Tamper Resistance

The Certified Testing Equipment operators, Department personnel, and Contractor authorized service technicians shall be prevented from changing any inspection results, programs, or data contained on the Certified Testing Equipment. The Contractor shall use appropriate software and/or hardware provisions to protect files and programs.

2 – Hardware/Software Requirements

2.1 Accessing the OBD System

The Certified Testing Equipment must include hardware and software necessary to access the on-board computer systems of vehicles subject to OBD inspections. This includes the following:

- 1996 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 8,500 pounds or less
- 2008 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less
- 2007 and newer diesel and diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less

The Certified Testing Equipment shall be compliant with the recommended practices regarding OBD inspections contained in J1962, J1978, and J1979 as published by the Society of Automotive Engineers (SAE). The Certified Testing Equipment must be able to connect to the vehicle's data link connector (DLC) and access, at a minimum, the following OBD data:

- Service modes \$01, \$03, \$06, \$07, \$09, \$0A

The Certified Testing Equipment must be capable of communicating with all OBD vehicles that use, at a minimum, the following communications protocols:

- International Organization for Standardization (ISO) 9141
- Variable Pulse Width (VPW)
- Pulse Width Modulation (PWM)
- Keyword Protocol 2000 (KWP)
- Controller Area Network (CAN)

2.2 Barcode Scanner

The Certified Testing Equipment must include a bar code scanner capable of reading both 1D and 2D barcodes. The bar code scanner must be able to read the barcode through a windshield. The barcode scanner must be able to withstand multiple 6.5 foot (2 meter) drops to concrete and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

The bar code scanner may be a stand alone device or may be integrated into the Certified Testing Equipment.

2.3 Camera

Certified Testing Equipment shall be equipped with video capturing equipment. The video capturing equipment must capture video from each official emissions inspection.

APPENDIX F – WAIVERS FOR “NOT READY” VEHICLES

A vehicle owner may be eligible for a Waiver when their gasoline powered vehicle is “Not Ready” and the following conditions are met:

- 1 The vehicle is not subject to a modified OBDII test because of OBD deficiencies;
- 2 The vehicle has an official test performed showing a “Not Ready” status. The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer.
- 3 A second inspection has been performed showing the following:
 - 3.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 3.2 The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles;
 - 3.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 3.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 4 A third inspection has been performed by a second repair station showing the following:
 - 4.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 4.2 The initial and third test dates are separated by at least 14 days and the vehicle has traveled a minimum of 400 miles;
 - 4.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 4.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 5 At least one of the statements must come from the vehicle manufacturer’s dealership repair station. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a “Ready” status. The dealership must also document that the vehicle’s computer is up to date and functioning properly. The computer must be updated if required or recommended by the manufacturer. If the computer is updated the vehicle must complete the appropriate drive cycles following the update.
- 6 The cost requirements as set forth by this Regulation must be met in order to qualify for a Waiver. In order to count labor the repair station must employ individuals with current ASE L1, ASE A8, or other certifications approved by the Department.

ITEM 6



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-051-19

M E M O R A N D U M

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Thomas Gunter, Rules Coordinator

DATE: May 24, 2019

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; and R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The amendments to Section X, Vehicle Inspection and Maintenance Program, Parts A and F will have to be incorporated into the Utah Air Quality Rules. R307-110-31 is the rule that incorporates the new amendments to Part A into the rules and R307-110-36 is the rule that incorporates the new amendments to Part F. If the Board adopts the amendments proposed to Parts A and F, these amendments will become part of Utah's State Implementation Plan when the rule is finalized.

Recommendation: Staff recommends the Board propose R307-110-31 and R307-110-36 for public comment.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses revenues or expenditures, because each county implements their own Inspection and Maintenance programs. This rule only incorporates those existing plans into the State Implementation Plan.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

**"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on ~~December 5~~ September 4, 201~~2~~⁹, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: ~~[March 5], 2019~~

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

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The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

**"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

R307. Environmental Quality, Air Quality.**R307-110. General Requirements: State Implementation Plan.**

R307-110-36. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as most recently adopted by the Utah Air Quality Board on [November 6]September 4, 201[3]9, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, PM10, PM2.5, ozone

Date of Enactment or Last Substantive Amendment: [March—5], 2019

Notice of Continuation: January 27, 2017

Authorizing, and Implemented or Interpreted Law: 19-2-104

ITEM 7



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-049-19

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Joel Karmazyn, Environmental Scientist

DATE: May 24, 2019

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend R307-204. Emission Standards: Smoke Management.

An interagency memorandum of understanding (MOU) between the Division of Air Quality (DAQ) and state and federal land managers has been in place since the 1990's to establish cooperation in providing data and coordination for smoke management for prescribed fires. The signatories to the MOU subsequently developed a Smoke Management Plan (SMP) that describes the operational procedures for prescribed fires on specific lands owned or managed by state and federal land management agencies in Utah. The SMP also details the responsibilities of the organizational structure developed to operate the SMP, including the Smoke Program Coordinator position. The SMP was approved by the Environmental Protection Agency on November 8, 1999, under the Interim Air Quality Policy on Wildland and Prescribed Fires. The requirements established in the SMP provide the framework for R307-204.

The primary purpose for amending R307-204 is to meet requirements set forth in 2019 H.B. 155, which states:

"In the rules made by the board...the board shall require the land manager to:

- (i) describe the use of a state, county, or municipal resource in the large prescribed fire or large prescribed pile fire;
- (ii) provide the division the burn plan for a large prescribed fire or large prescribed pile fire by no later than one week before the day of the burn window; and
- (iii) notify the division of a nonfull suppression event once a fire becomes a nonfull suppression event."

DAQ-049-19

Page 2

Additionally, this amendment reduces redundancies and outdated portions of the rule, while also streamlining it. The significant revisions include:

- Removing outdated smoke policy terminology, such as, wildland fire use, and plan stages.
- Combining Section R307-204-6 with R307-204-7 and Section R307-204-8 with R307-204-9.
- Deleted outdated language regarding adjusting fire emission factors. DAQ inventory personnel adjust fire emission factors as per EPA directive.
- Removing conformity from the rule. On May 21, 1998, EPA issued an "Interim Air Quality Policy on Wildland and Prescribed Fires." Under this policy, federally prescribed fire projects would be considered to conform with the implementation plan if they are managed under a certified basic smoke management program. The SMP meets all of the criteria. The interim policy is available on the Office of Environmental Policy and Assistance's web site at:

<https://www.epa.gov/general-conformity/general-conformity-training-module-35-demonstrating-conformity>

There is no relaxation of the technical requirements; therefore, there is no potential for backsliding.

Recommendation: Staff recommends that the Board propose amended R307-204 for public comment.

Appendix 1: Regulatory Impact Summary Table*

Fiscal Costs	FY 2020	FY 2021	FY 2022
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Person	\$0	\$0	\$0
Total Fiscal Costs:	\$0	\$0	\$0
Fiscal Benefits			
State Government	\$0	\$0	\$0
Local Government	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits:	\$0	\$0	\$0
Net Fiscal Benefits:	\$0	\$0	\$0

*This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts for State Government, Local Government, Small Businesses and Other Persons are described in the narrative. Inestimable impacts for Non-Small Businesses are described in Appendix 2.

Appendix 2: Regulatory Impact to Non-Small Businesses

This rule change is not expected to have any fiscal impacts on non-small businesses revenues or expenditures, because the amendments bring the code into compliance with recent changes in Utah state code and/or are already required under federal regulation.

The Executive Director of the Department of Environmental Quality, Alan Matheson, has reviewed and approved this fiscal analysis.

**"Non-small business" means a business employing 50 or more persons; "small business" means a business employing fewer than 50 persons.

R307. Environmental Quality, Air Quality.

R307-204. Emission Standards: Smoke Management.

R307-204-1. Purpose and Goals.

(1) The purpose of R307-204 is to establish by rule procedures that mitigate the impacts on ~~[public health]~~ air quality and visibility ~~[of]~~ from prescribed fire ~~[and wildland fire]~~.

R307-204-2. Applicability.

(1) R307-204 applies to all persons using prescribed fire ~~or wildland fire~~ on land they own or manage.

(2) R307-204 does not apply to agricultural activities specified in 19-2-114 and to those regulated under R307-202, or to activities otherwise permitted under R307.

R307-204-3. Definitions.

1 The following additional definitions apply only to R307-
2 204.

3 "Annual Emissions Goal" means the annual establishment of a
4 planned quantitative value of emissions reductions from
5 prescribed fire.

6 "Best Management Practices" means smoke management and
7 dispersion techniques used during a prescribed fire~~[—or—a~~
8 ~~wildland fire use event]~~ that affect the direction, duration,
9 height or density of smoke.

10 ~~["Burn Plan" means the plan required for each fire~~
11 ~~application ignited by managers. It must be prepared by~~
12 ~~qualified personnel and approved by the appropriate agency~~
13 ~~administrator prior to implementation. Each plan follows~~
14 ~~specific agency direction and must include critical elements~~
15 ~~described in agency manuals.]~~

16 "Burn Window" means the period of time during which the
17 prescribed fire is scheduled for ignition.

18 "Emission Reduction Techniques (ERT)" mean techniques for
19 controlling emissions from prescribed fires to minimize the
20 amount of emission output per unit or acre burned.

21 "Federal Class I Area" means any Federal land that is
22 federally classified or reclassified Class I.

23 ~~["Fire Prescription" means the measurable criteria that~~
24 ~~define conditions under which a prescribed fire may be ignited,~~
25 ~~guide selection of appropriate management responses, and~~
26 ~~indicates other required actions. Prescription criteria may~~
27 ~~include safety, economic, public health, environmental,~~
28 ~~geographic, administrative, social, or legal considerations.]~~

29 "Land Manager" means any federal, state, local or private
30 entity that owns, administers, directs, oversees or controls the
31 use of public or private land, including the application of fire
32 to the land.

33 "Non-burning Alternatives to Fire" means non-burning
34 techniques that are used to achieve a particular land management
35 objective, including but not limited to reduction of fuel
36 loading, manipulation of fuels, enhancement of wildlife habitat,
37 and ecosystem restructuring. These alternatives are designed to
38 replace the use of fire for at least~~[—the next]~~ five years.

39 "Nonfull suppression event" means a naturally ignited
40 wildland fire (wildfire) for which a land manager secures less
41 than full suppression to accomplish a specific prestatd
42 resource management objective in a predefined geographic area.

43 "Particulate Matter" means the liquid or solid particles
44 such as dust, smoke, mist, or smog found in air emissions.

45 "Pile" means natural materials or debris resulting from
46 some type of fuels management practice that have been relocated
47 either by hand or machinery into a concentrated area.

48 "Pile Burn" means burning of individual piles.

49 "Prescribed Fire or Prescribed Burn" means ~~[any fire~~

1 ~~ignited by management actions to meet specific objectives, such~~
2 ~~as achieving resource benefits]~~a wildland fire originating from
3 a planned ignition to meet specific objectives identified in a
4 written, approved, prescribed fire plan.

5 "Prescribed Fire Plan" means the plan required for each
6 fire application ignited by managers. It must be prepared by
7 qualified personnel and approved by the appropriate agency
8 administrator prior to implementation. Each plan follows
9 specific agency direction and must include critical elements
10 described in agency manuals.

11 "Prescription" means the measurable criteria that define
12 conditions under which a prescribed fire may be ignited, guide
13 selection of appropriate management responses, and indicates
14 other required actions. Prescription criteria may include
15 safety, economic, public health, environmental, geographic,
16 administrative, social, or legal considerations.

17 "Smoke Sensitive Receptors" mean population centers such as
18 towns and villages, campgrounds and trails, hospitals, nursing
19 homes, schools, roads, airports, Class I areas, nonattainment
20 and maintenance areas, areas whose air quality monitoring data
21 indicate pollutant levels that are close to health standards,
22 and any other areas where smoke and air pollutants can adversely
23 affect public health, safety and welfare.

24 "Wildfire" means unplanned ignition of a wildland fire
25 (such as a fire caused by lightning, volcanoes, unauthorized and
26 accidental human-caused fires) and escaped prescribed fires.

27 "Wildland" means an area in which development is
28 essentially non-existent, except for pipelines, power lines,
29 roads, railroads, or other transportation or conveyance
30 facilities. Structures, if any, are widely scattered.

31 "Wildland Fire" means any non-structure fire[~~, other than~~
32 ~~prescribed fire,~~] that occurs in the wildland.

33 ~~_____ "Wildland Fire Use Event" means naturally ignited wildland~~
34 ~~fire that is managed to accomplish specific pre-stated resource~~
35 ~~management objectives in predefined geographic areas.~~

36 ~~_____ "Wildland Fire Implementation Plan(WFIP)" means the plan~~
37 ~~required for each fire that is allowed to burn.~~

38 ~~_____ "WFIP Stage I" means the initial wildland fire strategy~~
39 ~~planning document. It is developed for fires less than 20~~
40 ~~acres, with a low potential of spread and negative impacts. It~~
41 ~~must be completed within 8-hrs. of start.~~

42 ~~_____ "WFIP Stage II" means a more detailed wildland fire~~
43 ~~strategy planning document. It is developed for fires greater~~
44 ~~than 20 acres that are more active fires with a greater~~
45 ~~potential for geographic extent. It must be completed within~~
46 ~~24-hrs of start.]~~

47
48
49 **R307-204-4. General Requirements.**

(1) Management of On-Going Fires. The land manager shall notify the Division of all wildfires, including nonfull suppression events. If, after consultation with the land manager, the [d]Director determines that a prescribed fire, [wildland fire use event,] wild[land]fire, or any smoke transported from other locations, is degrading air quality to levels that could violate the National Ambient Air Quality Standards or burn plan conditions, the land manager shall promptly stop igniting additional prescribed fires.

~~(2) [Emissions Calculations. In calculating emissions information required under R307-204, each land manager shall use emission factors approved by the Director.~~

~~(3)] Non-burning Alternatives to Fire. [Beginning in 2004 and annually thereafter, e]Each land manager shall submit to the [d]Director annually, by March 15, a list of areas treated using non-burning alternatives to fire during the previous calendar year, including the number of acres, the specific types of alternatives used, and the location of these areas.~~

~~(4)] Annual Emissions Goal. The [d]Director shall provide an opportunity for an annual meeting with land managers for the purpose of evaluation and adoption of the annual emission goal. The annual emission goal shall be developed in cooperation with states, federal land management agencies and private entities, to control prescribed fire emissions increases to the maximum feasible extent.~~

~~(5)] Long-term Fire Projections. Each land manager shall provide to the [d]Director by March 15 annually long-term projections of future prescribed fire activity for annual assessment of visibility impairment.~~

R307-204-5. Burn Schedule.

(1) Any land manager planning prescribed fire burning more than 50 acres per year shall submit the burn schedule to the [d]Director on forms provided by the Division ~~of Air Quality~~, and shall include the following information for all prescribed fires including those smaller than 20 acres:

(a) ~~[Project number and p]~~Project name and de minimis status;

(b) ~~[Air Quality Basin, UTM coordinate for the central point of the prescribed fire, project elevation, and county]~~Latitude and longitude;

(c) ~~[Total project acres, description of major fuels, type of burn, ignition method]~~Acres for the year, fuel type, and planned use of emission reduction techniques to support establishment of the annual emissions goal; and

(d) ~~[Earliest]~~Expected burn dates and burn duration.

(2) Each land manager shall submit each year's burn schedule no later than March 15 of that year.

(3) Any land manager who makes changes to the burn

1 schedule shall submit an amendment to the burn schedule within
2 10 days after the change.

3
4 **R307-204-6. Small Prescribed Fires (de minimis).**

5 (1) A prescribed fire that covers less than 20 acres per
6 burn or less than 30,000 cubic feet of piled material shall be
7 ignited ~~[only]~~either when (1)the clearing index is 500 or
8 greater~~[-]~~, (2) when the clearing index is between 400 and 499,
9 if;

10 ~~[(2) A prescribed fire that covers less than 20 acres per~~
11 ~~day may be ignited when the National Weather Service Clearing~~
12 ~~Index is between 500 and 400 with approval of the director.]~~

13 (a) The prescribed fire ~~[should be]~~is recorded as a de
14 minimis prescribed fire on the [Utah A]annual [B]burn
15 [S]schedule[-];

16 (b) The [L]land [M]manager ~~[is required to notify]~~obtains
17 approval from the [d]Director by[-fax,] e-mail[,] or phone prior
18 to ignition of the burn~~[when burning below a National Weather~~
19 ~~Service Clearing Index is between 500 and 400.]; and~~

20 (c) The land manager ~~[must include]~~submits to the Director
21 hourly photographs, a record of any complaints, hourly
22 meteorological conditions and an hourly description of the smoke
23 plume[-must be recorded and submitted].

24
25 **~~R307-204-7. [Small Prescribed Pile Fires (de minimis)].~~**

26 ~~—— (1) Pile burns covering up to 30,000 cubic feet per day~~
27 ~~shall be ignited only when the clearing index is 500 or greater.~~

28 ~~—— (2) Pile burns covering up to 30,000 cubic feet per day~~
29 ~~may be ignited when the National Weather Service Clearing Index~~
30 ~~is between 500 and 400 with approval of the director.~~

31 ~~—— (a) The pile fire should be recorded as a de minimis~~
32 ~~prescribed fire on the Utah Annual Burn Schedule.~~

33 ~~—— (b) The Land Manager is required to notify the director by~~
34 ~~fax, e-mail, or phone prior to ignition of the burn when burning~~
35 ~~below a National Weather Service Clearing Index is between 500~~
36 ~~and 400.~~

37 ~~—— (c) The land manager must include hourly photographs, a~~
38 ~~record of any complaints, hourly meteorological conditions and~~
39 ~~an hourly description of the smoke plume must be recorded and~~
40 ~~submitted.~~

41
42 **~~R307-204-8.] Large Prescribed Fires.~~**

43 (1) ~~[Burn Plan.——]~~For a prescribed fire that covers 20
44 acres or more per burn or 30,000 cubic feet of piled material or
45 more, the land manager shall submit to the [d]Director a
46 [burn]prescribed fire plan at least one week before the
47 beginning of the burn window.[,] The plan shall includ[ing]e a[
48 fire] prescription and description of other state, county,
49 municipal, or federal resources available on scene, or for

1 contingency purposes.

2 ~~(2) [Pre-Burn Information. For a prescribed fire that~~
3 ~~covers 20 acres or more per burn, t]~~The land manager shall
4 submit pre-burn information to the [d]Director at least two
5 weeks before the beginning of the burn window. The pre-burn
6 information shall be submitted to the [d]Director on the
7 appropriate form provided by the Division ~~—[of Air Quality by~~
8 ~~fax, electronic mail or postal mail—]~~and shall include the
9 following information:

10 (a) The ~~[three-letter ID, project number, date submitted,~~
11 ~~name of person submitting the form, burn manager, and phone~~
12 ~~numbers]~~project name, total acres, and latitude and longitude;

13 (b) Summary of ignition method, burn type, and burn
14 objectives, such as restoration or maintenance of ecological
15 functions or ~~[indication of fire resiliency]~~hazardous fuel
16 reduction;

17 (c) Any sensitive receptor within 15 miles, including any
18 Class I or nonattainment or maintenance area, and distance and
19 direction in degrees from the project site;

20 ~~[(d) Planned mitigation methods;]~~

21 ~~[(e)d]~~ The smoke dispersion or visibility model used and
22 results;

23 ~~[(f)e]~~ The estimated amount of total particulate matter
24 anticipated;

25 ~~[(g)f]~~ A description of how the public and land managers
26 in neighboring states will be notified;

27 ~~[(h)g]~~ A map depicting both the daytime and nighttime
28 smoke path and down-drainage flow for a minimum of 15 miles from
29 the burn site with smoke-sensitive areas delineated;

30 ~~[(i)h]~~ Safety and contingency plans for addressing any
31 smoke intrusions; ~~[-and~~

32 ~~—(j) If the fire is in a nonattainment or maintenance area~~
33 ~~and is subject to general conformity (42 U.S.C. 7506(c)), a copy~~
34 ~~of the conformity demonstration showing that the fire meets the~~
35 ~~requirements of the Clean Air Act and conforms with the~~
36 ~~applicable State Implementation Plan.]~~

37 ~~[(k)i]~~ Planned use of emission reduction techniques to
38 support establishment of an annual emissions goal, if not
39 already submitted under R307-204-5[-]; and

40 ~~[(l)j]~~ Any other information needed by the [d]Director for
41 smoke management purposes, or for assessment of contribution to
42 visibility impairment in any Class I area.

43 (3) Burn Request.

44 (a) The land manager shall submit to the [d]Director a
45 burn request on the form provided by the Division~~—[of Air~~
46 ~~Quality]~~ by 1000 hours at least two business days before the
47 planned ignition time. The form ~~[may be submitted by fax or~~
48 ~~electronic mail, and]~~must include the following information:

49 (i) The ~~[three-letter identification and project number~~

1 ~~consistent with the annual burn schedule required in R307-204-~~
2 ~~5(1) above]~~project name;

3 (ii) The date submitted and by whom; ~~[-and]~~

4 (iii) The burn manager conducting the burn and phone
5 numbers; and

6 (iv) The dates of the requested burn window.

7 (b) No large prescribed fire ~~[requiring a burn plan]~~ shall
8 be ignited before the [d]Director approves the burn request.

9 (c) If a prescribed fire is delayed, changed or not
10 completed following burn approval, any significant changes in
11 the burn plan shall be submitted to the [d]Director before the
12 burn request is submitted. ~~[-If a prescribed fire is not carried~~
13 ~~out, the land manager shall list the reasons on the burn request~~
14 ~~form provided by the Division of Air Quality and shall submit~~
15 ~~the form by fax or electronic mail to the director by 0800 hours~~
16 ~~the following business day.]~~

17 (4) Daily Emissions Report. By 0800 hours on the day
18 following the prescribed ~~[burn]~~fire, for each day of prescribed
19 fire activity covering 20 acres or more, the land manager shall
20 submit to the [d]Director a daily emission report on the form
21 provided by the Division ~~[-of Air Quality]~~ including the
22 following information:

23 (a) ~~[The three-letter identification and project number~~
24 ~~consistent with the annual burn schedule required in R307-204-~~
25 ~~5(1) above]~~Project name;

26 (b) The date submitted and by whom;

27 (c) The start and end dates and times of the burn;

28 (d) Emission information [including], to include total
29 affected acres, black acres, tons fuel consumed per acre, and
30 tons particulate matter produced;

31 (e) Public interest regarding smoke;

32 (f) Daytime ~~[ventilation]~~smoke behavior;

33 (g) Nighttime smoke behavior;

34 (h) Emission reduction techniques applied; and

35 ~~[(h)i)~~ Evaluation of the techniques used by the land
36 manager to reduce emissions or manage the smoke from the
37 prescribed burn ~~[-; and~~

38 ~~----- (i) Emission reduction techniques applied].~~

39 (5) Emission Reduction and Dispersion Techniques. Each
40 land manager shall take measures to prevent smoke impacts. Such
41 measures may include best management practices such as dilution,
42 emission reduction or avoidance in addition to others described
43 in the pre-burn information form provided by the Division ~~[-of~~
44 ~~Air Quality]~~. An evaluation of the techniques shall be included
45 in the daily emissions report required by (4) above.

46 (6) Monitoring. Land managers shall monitor the effects
47 of the prescribed fire on smoke sensitive receptors and on
48 visibility in Class I areas, as directed by the burn plan.
49 Hourly visual monitoring and documentation of the direction of

1 the smoke plume shall be recorded on the form provided by the
2 Division[~~of Air Quality~~] or on the land manager's equivalent
3 form. Complaints from the public shall be noted in the land
4 managers project file. Records shall be available for
5 inspection by the [d]Director for six months following the end
6 of the fire.

7
8 **~~[R307-204-9. Large Prescribed Pile Fires.]~~**

9 ~~—— (1) Burn Plan. For a prescribed pile fire that exceeds~~
10 ~~30,000 cubic feet per day, the land manager shall submit to the~~
11 ~~director a burn plan, including a fire prescription.~~

12 ~~—— (2) Pre-Burn Information. For a prescribed pile fire that~~
13 ~~exceeds 30,000 cubic feet or more per burn, the land manager~~
14 ~~shall submit pre-burn information to the director at least two~~
15 ~~weeks before the beginning of the burn window. The pre-burn~~
16 ~~information shall be submitted to the director on the~~
17 ~~appropriate form provided by the Division of Air Quality by fax,~~
18 ~~electronic mail or postal mail and shall include the following~~
19 ~~information:~~

20 ~~—— (a) The three-letter ID, project number, date submitted,~~
21 ~~name of person submitting the form, burn manager, and phone~~
22 ~~numbers;~~

23 ~~—— (b) Summary of burn objectives, such as restoration or~~
24 ~~maintenance of ecological functions or indication of fire~~
25 ~~resiliency;~~

26 ~~—— (c) Any sensitive receptor within 15 miles, including any~~
27 ~~Class I or nonattainment or maintenance area, and distance and~~
28 ~~direction in degrees from the project site;~~

29 ~~—— (d) Planned mitigation methods;~~

30 ~~—— (e) The smoke dispersion or visibility model used and~~
31 ~~results;~~

32 ~~—— (f) The estimated amount of total particulate matter~~
33 ~~anticipated;~~

34 ~~—— (g) A description of how the public and land managers in~~
35 ~~neighboring states will be notified;~~

36 ~~—— (h) A map depicting both the daytime and nighttime smoke~~
37 ~~path and down-drainage flow for a minimum of 15 miles from the~~
38 ~~burn site with smoke-sensitive areas delineated;~~

39 ~~—— (i) Safety and contingency plans for addressing any smoke~~
40 ~~intrusions; and~~

41 ~~—— (j) If the fire is in a nonattainment or maintenance area~~
42 ~~and is subject to general conformity (42 U.S.C. 7506(c)), a copy~~
43 ~~of the conformity demonstration showing that the fire meets the~~
44 ~~requirements of the Clean Air Act and conforms with the~~
45 ~~applicable State Implementation Plan.~~

46 ~~—— (k) Planned use of emission reduction techniques to~~
47 ~~support establishment of an annual emissions goal, if not~~
48 ~~already submitted under R307-204-5.~~

49 ~~—— (l) Any other information needed by the director for smoke~~

management purposes, or for assessment of contribution to visibility impairment in any Class I area.

~~(3) Burn Request.~~

~~(a) The land manager shall submit to the director a burn request on the form provided by the Division of Air Quality by 1000 hours at least two business days before the planned ignition time. The form may be submitted by fax or electronic mail, and must include the following information:~~

~~(i) The three-letter identification and project number consistent with the annual burn schedule required in R307-204-5(1) above;~~

~~(ii) The date submitted and by whom; and~~

~~(iii) The burn manager conducting the burn and phone numbers.~~

~~(b) No prescribed pile fire requiring a burn plan shall be ignited before the director approves the burn request.~~

~~(c) If a prescribed pile fire is delayed, changed or not completed following burn approval, any significant changes in the burn plan shall be submitted to the director before the burn request is submitted. If a prescribed fire is not carried out, the land manager shall list the reasons on the burn request form provided by the Division of Air Quality and shall submit the form by fax or electronic mail to the director by 0800 hours the following business day.~~

~~(4) Daily Emissions Report. By 0800 hours on the day following the prescribed pile burn, for each day of pile fire activity exceeding 30,000 cubic feet, the land manager shall submit to the director a daily emission report on the form provided by the Division of Air Quality including the following information:~~

~~(a) The three-letter identification and project number consistent with the annual burn schedule required in R307-204-5(1) above;~~

~~(b) The date submitted and by whom;~~

~~(c) The start and end dates and times of the burn;~~

~~(d) Emission information including black acres, tons fuel consumed per acre, and tons particulate matter produced;~~

~~(e) Public interest regarding smoke;~~

~~(f) Daytime ventilation;~~

~~(g) Nighttime smoke behavior;~~

~~(h) Evaluation of the techniques used by the land manager to reduce emissions or manage the smoke from the prescribed pile burn; and~~

~~(i) Emission reduction techniques applied.~~

~~(5) Emission Reduction and Dispersion Techniques. Each land manager shall take measures to prevent smoke impacts. Such measures may include best management practices such as dilution, emission reduction or avoidance in addition to others described in the pre-burn information form provided by the Division of Air~~

1 ~~Quality. An evaluation of the techniques shall be included in~~
2 ~~the daily emissions report required by (4) above.~~

3 ~~(6) Monitoring. Land managers shall monitor the effects~~
4 ~~of the prescribed pile fire on smoke sensitive receptors and on~~
5 ~~visibility in Class I areas, as directed by the burn plan.~~
6 ~~Hourly visual monitoring and documentation of the direction of~~
7 ~~the smoke plume shall be recorded on the form provided by the~~
8 ~~Division of Air Quality or on the land manager's equivalent~~
9 ~~form. Complaints from the public shall be noted in the land~~
10 ~~managers project file. Records shall be available for~~
11 ~~inspection by the director for six months following the end of~~
12 ~~the fire.~~

13
14 **~~R307-204-10. Requirements for Wildland Fire Use Events.~~**

15 ~~(1) Burn Approval Required.~~

16 ~~(a) The land manager shall notify the director of any~~
17 ~~potential wildland fire use (WFU) event having a WFIP Stage I.~~
18 ~~The following information will be provided:~~

19 ~~(i) UTM coordinate of the fire;~~

20 ~~(ii) Active burning acres;~~

21 ~~(iii) Probable fire size and daily anticipated growth in~~
22 ~~acres;~~

23 ~~(iv) Types of wildland fuel involved;~~

24 ~~(v) An emergency telephone number that is answered 24~~
25 ~~hours a day;~~

26 ~~(vi) Wilderness or Resource Natural Area designation, if~~
27 ~~applicable;~~

28 ~~(vii) Distance to nearest community;~~

29 ~~(viii) Elevation of fire; and~~

30 ~~(ix) Fire's airshed number.~~

31 ~~(b) The Land Managers shall notify the director of any~~
32 ~~potential wildland fire use event covering more than 20 acres or~~
33 ~~having a WFIP Stage II due to higher potential for spread and~~
34 ~~negative impacts. In addition to the information required for a~~
35 ~~WFU with a WFIP Stage I, the following additional information~~
36 ~~will be provided to the director as it is being developed:~~

37 ~~(i) WFIP Stage II wildland fire implementation plan and~~
38 ~~anticipated emissions;~~

39 ~~(ii) A map depicting both the daytime and nighttime smoke~~
40 ~~path and down-drainage flow for a minimum of 15 miles from the~~
41 ~~burn site with smoke-sensitive areas delineated; and~~

42 ~~(iii) Additional computer smoke modeling, if requested by~~
43 ~~the director.~~

44 ~~(c) The director's approval of the smoke management~~
45 ~~element of the wildland fire implementation plan shall be~~
46 ~~obtained before managing the fire as a wildland fire use event.~~

47 ~~(2) Daily Emission Report for wildland fire use event. By~~
48 ~~0800 hours on the business day following fire activity covering~~
49 ~~20 acres or more, the land manager shall submit to the director~~

1 the daily emission report on the form provided by the Division
2 of Air Quality, including the following information:

3 ~~_____ (a) The three-letter identification, project number, Air~~
4 ~~Quality Basin, and name of the burn manager;~~

5 ~~_____ (b) UTM coordinate;~~

6 ~~_____ (c) Dates and times of the start and end of the burn;~~

7 ~~_____ (d) Black acres by wildland fuel type;~~

8 ~~_____ (e) Estimated proportion of wildland fuel consumed by~~
9 ~~wildland fuel type;~~

10 ~~_____ (f) Proportion of moisture in the wildland fuel by size~~
11 ~~class;~~

12 ~~_____ (g) Emission estimates;~~

13 ~~_____ (h) Level of public interest or concern regarding smoke;~~
14 ~~and~~

15 ~~_____ (i) Conformance to the wildland fire implementation plan.~~

16 ~~_____ (3) Monitoring. The land manager shall monitor the~~
17 ~~effects of smoke on smoke sensitive receptors and visibility in~~
18 ~~Class I areas as directed by the wildland fire implementation~~
19 ~~plan. Complaints from the public shall be recorded in the~~
20 ~~project file. Records shall be available for inspection by the~~
21 ~~director for six months following the end of the fire.]~~

22
23 **KEY:** air quality, [~~wildland~~]prescribed fire, smoke[, ~~land~~
24 ~~manager~~]

25 **Date of Enactment or Last Substantive Amendment:** [~~July 7~~],
26 ~~201[1]9~~

27 **Notice of Continuation:** February 5, 2015

28 **Authorizing, and Implemented or Interpreted Law:** 19-2-104(1)(a)

ITEM 8



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-047-19

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Jason Krebs, Environmental Scientist

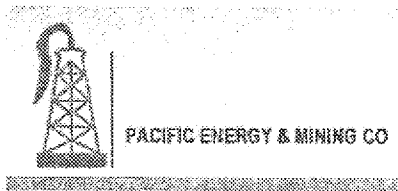
DATE: May 22, 2019

SUBJECT: Pacific Energy and Mining Company – Settlement Agreement

Pacific Energy and Mining Company (Pacific) operates a natural gas compressor station located near Ranch Exit #175 on I-70 in Grand County, Utah. On September 28, 2017, the Division of Air Quality (DAQ) sent Pacific a compliance advisory for violations observed during an inspection conducted on September 6, 2017. On October 3, 2017, Pacific submitted a response to the compliance advisory agreeing with the violations and explained how the plant would return to compliance. On March 2, 2018, the source received a Notice of Violation for lack of corrective action on the compliance advisory. On December 14, 2018, Pacific submitted a notice of intent for a new approval order (AO). A penalty of \$71,535.00 was assessed to Pacific on April 30, 2019. Half the settlement amount will be paid in cash, and half will be deferred for two years. If during the two year deferment period Pacific does not violate its AO and Utah environmental laws, the deferred \$35,767.50 will be waived. On May 16, 2019, Pacific accepted the settlement agreement and returned the signed settlement agreement to the DAQ. Pacific was inspected on April 3, 2019, to verify compliance.

Under Section 19-2-104(3)(b)(i) of the Utah Code, this memorandum is submitted to the Board for review since the penalty exceeds \$25,000. A copy of the settlement agreement is provided. The DAQ will withhold any further action on this case until the Board approves or disapproves the settlement. The number of days out of compliance is not reflected in this penalty worksheet as the penalty predates the change in the worksheet. The estimated number of days out of compliance is 571 days. Penalty days were figured from initial inspection to the most recent inspection.

Recommendation: Staff recommends that the Board approve the settlement of \$71,535.00.



UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAY 20 2019

DIVISION OF AIR QUALITY

May 16, 2019

Rick Ombach
Department of Environmental Quality
Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

Subject: Settlement Agreement

Dear Mr. Ombach:

Enclosed please find the fully executed settlement agreement.

Sincerely,

Tariq Ahmad



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-0354-19
Site ID: 14111 (B1)

April 30, 2019

Sent Via Certified Mail No. 70171070000091093184

Tariq Ahmad
Pacific Energy and Mining Company
3550 Barron Way, Suite 13-A
Reno, Nevada 89511-1852

Dear Mr. Ahmad:

Re: Settlement Agreement — Pacific Energy and Mining Company

On September 28, 2017, the Utah Division of Air Quality (DAQ) issued a Compliance Advisory to Pacific Energy and Mining Company (PEMC) as a result of an inspection performed on September 6, 2017. PEMC responded to the Compliance Advisory on October 3, 2017. On March 6, 2018, DAQ issued a Notice of Violation to PEMC as no progress in addressing the findings of the September 6, 2017, inspection had been demonstrated. Based on the findings of the inspection, PEMC's responses to the Compliance Advisory and the Notice of Violation, and a March 5, 2019, settlement conference call with PEMC, the DAQ determined that PEMC was in violation of:

1. Condition II.B.1.a. of Approval Order DAQE-AN141110004-16:

PEMC was actuating process control devices with process off-gas.

2. 40 CFR NSPS Subpart KKK of Part 60:

PEMC was not able to demonstrate compliance with applicable requirements of 40 CFR Subpart KKK of Part 60.

Section 19-2-115 of the Utah Code Annotated provides that violations of the Utah Air Conservation Act and/or any order issued thereunder may be subject to a civil penalty of up to \$10,000.00 per day for each violation. Based upon our civil penalty policy, we calculated a preliminary civil penalty for the above listed violations of \$71,535.00.

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144820 • Salt Lake City, UT 84114-4820
Telephone (801) 536-4000 • Fax (801) 536-4099 • T.D.D. (801) 903-3978
www.deq.utah.gov

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DAQC-0354-19

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The monetary amount of the DAQ settlement offer specified below is derived from a pre-established schedule of penalties, which takes into account, among other factors, the magnitude and severity of the violation, economic benefit, cooperation of the source as well as the prior history of violations.

All parties we deal with, whether private, commercial, or governmental are treated similarly in the settlement process. Settlement Agreements are based on the evaluation of the same factors and criteria in all cases. The DAQ acknowledges that the violations on September 6, 2017, was addressed by installing instrument air to drive the process controllers, employing a consultant to assist with a regulatory audit, and submitting a Notice of Intent to DAQ on December 14, 2018.

If you are interested in settling this violation, we are authorized to offer settlement in accordance with the DAQ Penalty Policy as follows:

1. Pacific Energy and Mining Company agree to pay a civil penalty in the sum of \$71,535.00. Payment of a civil penalty precludes further civil enforcement for the above described violation against the named source.
 - a. \$35,767.50 of the stipulated penalty will be deferred for a two year period. This portion of the penalty shall be immediately due and payable if Pacific Energy and Mining, at any of its operations within the State, violates the provisions of this Settlement Agreement, the Act, Rules, or Orders within the next two years, this portion of the penalty shall be waived.
 - b. \$35,767.50 will be paid in twelve equal monthly installments of \$2,980.63. The first payment will be paid by July 1, 2019. The eleven remaining payments will be due on the 1st day of each month until the balance is paid in full.
2. The DAQ retains its authority to take any enforcement actions based on any and all violations not specifically described above.
3. In the event any further violations of the Utah Air Quality Rules occur, the DAQ may consider the violation described above in assessing a penalty for the subsequent violations, in accordance with the provisions of Utah Administrative Code R307-130.
4. Entering into this Settlement Agreement shall not constitute an admission of violation of the Utah Air Quality Rules, nor shall it be inferred to be such an admission in any administrative or judicial proceeding. The described violation will constitute part of the company compliance history for any purpose for which such history is relevant to the DAQ.

This Settlement Agreement constitutes an offer of settlement and is not a demand for payment. If the above terms are acceptable to you, please sign and return this Settlement Agreement to the DAQ at the letterhead address within twenty (20) business days of receipt of this agreement. Utah Code 19-2-104(3)(b)(i), requires the Utah Air Quality Board to review and

DAQC-0354-19

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MAY 20 2019

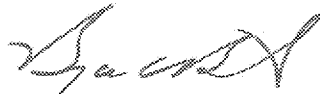
DIVISION OF AIR QUALITY

approve/disapprove any settlement negotiated by the Director that results in a civil penalty of \$25,000.00 or more in accordance with Subsection 19-2-107(2)(b)(viii). The DAQ will present this to the Utah Air Quality Board at the June 2019 board meeting for review and will recommend approval of the negotiated settlement.

This Settlement Agreement is intended to resolve the non-compliance issues listed above and requires the immediate attention of your company. Failure to resolve this matter as outlined above may result in this offer being revoked and/or having this matter referred to a formal enforcement process.

If you have any additional questions regarding this matter, please contact Rik Ombach at (801) 536-4164, or by email at rombach@utah.gov.

Sincerely,



Bryce C. Bird
Director

BCB:RO:bp

cc: Southeastern Utah District Health

Acceptance of Settlement Agreement

I have read the above Settlement Agreement and I agree to the terms and conditions thereof.

Pacific Energy and Mining Company:

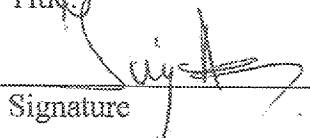
Name:

Title:

Signature

Date

Telephone Number

 5/12/19 775 333 6626

ITEM 9

Air Toxics



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQA-282-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: March 13, 2019

SUBJECT: Air Toxics, Lead-Based Paint, and Asbestos (ATLAS) Section Compliance Activities – February 2019

Asbestos Demolition/Renovation NESHAP Inspections	10
Asbestos AHERA Inspections	10
Asbestos State Rules Only Inspections	4
Asbestos Notification Forms Accepted	98
Asbestos Telephone Calls	298
Asbestos Individuals Certifications Approved/Disapproved	38/0
Asbestos Company Certifications/Re-Certifications	2/10
Asbestos Alternate Work Practices Approved/Disapproved	10/0
Lead-Based Paint (LBP) Inspections	15
LBP Notification Forms Approved	2
LBP Telephone Calls	81
LBP Letters Prepared and Mailed	37
LBP Courses Reviewed/Approved	0
LBP Course Audits	0
LBP Individual Certifications Approved/Disapproved	28/0
LBP Firm Certifications	9

DAQA-282-19

Page 2

Notices of Violation Sent	0
Compliance Advisories Sent	24
Warning Letters Sent	9
Settlement Agreements Finalized	2
Penalties Agreed to:	
Driggs Development, LLC	\$ 225.00
CertaPro Painters of Salt Lake	<u>\$1,500.00</u>
	\$1,725.00



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQA-362-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: April 12, 2019

SUBJECT: Air Toxics, Lead-Based Paint, and Asbestos (ATLAS) Section Compliance Activities – March 2019

Asbestos Demolition/Renovation NESHAP Inspections	10
Asbestos AHERA Inspections	10
Asbestos State Rules Only Inspections	5
Asbestos Notification Forms Accepted	143
Asbestos Telephone Calls	472
Asbestos Individuals Certifications Approved/Disapproved	127/0
Asbestos Company Certifications/Re-Certifications	3/8
Asbestos Alternate Work Practices Approved/Disapproved	7/0
Lead-Based Paint (LBP) Inspections	17
LBP Notification Forms Approved	3
LBP Telephone Calls	71
LBP Letters Prepared and Mailed	6
LBP Courses Reviewed/Approved	0
LBP Course Audits	0
LBP Individual Certifications Approved/Disapproved	50/0
LBP Firm Certifications	6

DAQA-362-19

Page 2

Notices of Violation Sent	0
Compliance Advisories Sent	4
Warning Letters Sent	9
Settlement Agreements Finalized	2
Penalties Agreed to:	
Alpine School District	\$1,080.00
Earthscapes, LLC	<u>\$ 200.00</u>
	\$1,280.00



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQA-427-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: May 7, 2019

SUBJECT: Air Toxics, Lead-Based Paint, and Asbestos (ATLAS) Section Compliance Activities – April 2019

Asbestos Demolition/Renovation NESHAP Inspections	11
Asbestos AHERA Inspections	11
Asbestos State Rules Only Inspections	7
Asbestos Notification Forms Accepted	167
Asbestos Telephone Calls	414
Asbestos Individuals Certifications Approved/Disapproved	40/0
Asbestos Company Certifications/Re-Certifications	2/9
Asbestos Alternate Work Practices Approved/Disapproved	11/0
Lead-Based Paint (LBP) Inspections	6
LBP Notification Forms Approved	0
LBP Telephone Calls	49
LBP Letters Prepared and Mailed	18
LBP Courses Reviewed/Approved	0
LBP Course Audits	1
LBP Individual Certifications Approved/Disapproved	28/0
LBP Firm Certifications	21

DAQA-427-19

Page 2

Notices of Violation Sent	1
Compliance Advisories Sent	14
Warning Letters Sent	15
Settlement Agreements Finalized	1
Penalties Agreed to:	
Momentum Engineering and Construction, LLC	\$675.00

Compliance



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-0523-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: March 12, 2019

SUBJECT: Compliance Activities – February 2019

Annual Inspections Conducted:

Major.....	4
Synthetic Minor	3
Minor	39

On-Site Stack Test Audits Conducted: 1

Stack Test Report Reviews: 21

On-Site CEM Audits Conducted: 0

Emission Reports Reviewed: 17

Temporary Relocation Requests Reviewed & Approved: 5

Fugitive Dust Control Plans Reviewed & Accepted:..... 157

Open Burn Permit Applications Completed Closed Season

Soil Remediation Report Reviews: 8

¹Miscellaneous Inspections Conducted:..... 14

Complaints Received: 10

DAQC-0523-19

Page 2

Breakdown Reports Received:.....	0
Compliance Actions Resulting From a Breakdown.....	0
Warning Letters Issued:	2
Notices of Violation Issued:.....	1
Unresolved Notices of Violations:	
US Magnesium	08/27/2015
Western Water Solutions	05/02/2017
Geneva Rock Products	10/20/2017
Norbest.....	11/15/2017
Strang Excavating	01/17/2018
US Magnesium	03/02/2018
Pacific Energy & Mining	03/02/2018
Gordon Creek Compressor Station	05/16/2018
JRJ Services	06/21/2018
JRJ Services	09/07/2018
Compass Minerals.....	12/10/2018
US Magnesium	01/08/2019
Mel Clark Construction	01/11/2019
Picasso Shutters	02/13/2019
Sunroc	02/28/2019
Compliance Advisories Issued:.....	4
No Further Action Letters Issued.....	2
Settlement Agreements Reached:	3
HJG, Utah	\$140,000.00
Rupps Trucking.....	\$6,369.00
Material Packaging Corporation	\$942.00

¹Miscellaneous inspections include, e.g., surveillance, level I inspections, VOC inspections, complaints, on-site training, dust patrol, smoke patrol, open burning, etc.



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-524-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: April 16, 2019

SUBJECT: Compliance Activities – March 2019

Annual Inspections Conducted:

Major.....	8
Synthetic Minor	4
Minor	49

On-Site Stack Test Audits Conducted: 1

Stack Test Report Reviews: 21

On-Site CEM Audits Conducted: 0

Emission Reports Reviewed: 0

Temporary Relocation Requests Reviewed & Approved: 5

Fugitive Dust Control Plans Reviewed & Accepted:..... 199

Open Burn Permit Applications Completed 685

Soil Remediation Report Reviews: 0

¹Miscellaneous Inspections Conducted:..... 20

Complaints Received: 5

DAQC-524-18

Page 2

Breakdown Reports Received:	0
Compliance Actions Resulting From a Breakdown	0
Warning Letters Issued:	0
Notices of Violation Issued:	1
Unresolved Notices of Violation:	
US Magnesium	08/27/2015
Western Water Solutions	05/02/2017
Geneva Rock Products	10/20/2017
Norbest	11/15/2017
Strang Excavating	01/17/2018
US Magnesium	03/02/2018
Pacific Energy & Mining	03/02/2018
Gordon Creek Compressor Station	05/16/2018
JRJ Services	06/21/2018
JRJ Services	09/07/2018
Compass Minerals	12/10/2018
US Magnesium	01/08/2019
Mel Clark Construction	01/11/2019
Picasso Shutters	02/13/2019
Sunroc	02/28/2019
Compliance Advisories Issued:	3
No Further Action Letters Issued	0
Settlement Agreements Reached:	2
Holly Refining	\$4,920.00
Chromalox	\$2,160.00

¹Miscellaneous inspections include, e.g., surveillance, level I inspections, VOC inspections, complaints, on-site training, dust patrol, smoke patrol, open burning, etc.



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQC-0637-19

MEMORANDUM

TO: Air Quality Board

FROM: Bryce C. Bird, Executive Secretary

DATE: May 10, 2019

SUBJECT: Compliance Activities – April 2019

Annual Inspections Conducted:

Major.....	6
Synthetic Minor	4
Minor	24
On-Site Stack Test Audits Conducted:	2
Stack Test Report Reviews:	22
On-Site CEM Audits Conducted:	18
Emission Reports Reviewed:	7
Temporary Relocation Requests Reviewed & Approved:	7
Fugitive Dust Control Plans Reviewed & Accepted:.....	212
Open Burn Permit Applications Completed.....	3,598
Soil Remediation Report Reviews:	0
¹ Miscellaneous Inspections Conducted:.....	11
Complaints Received:	3

DAQC-0637-19

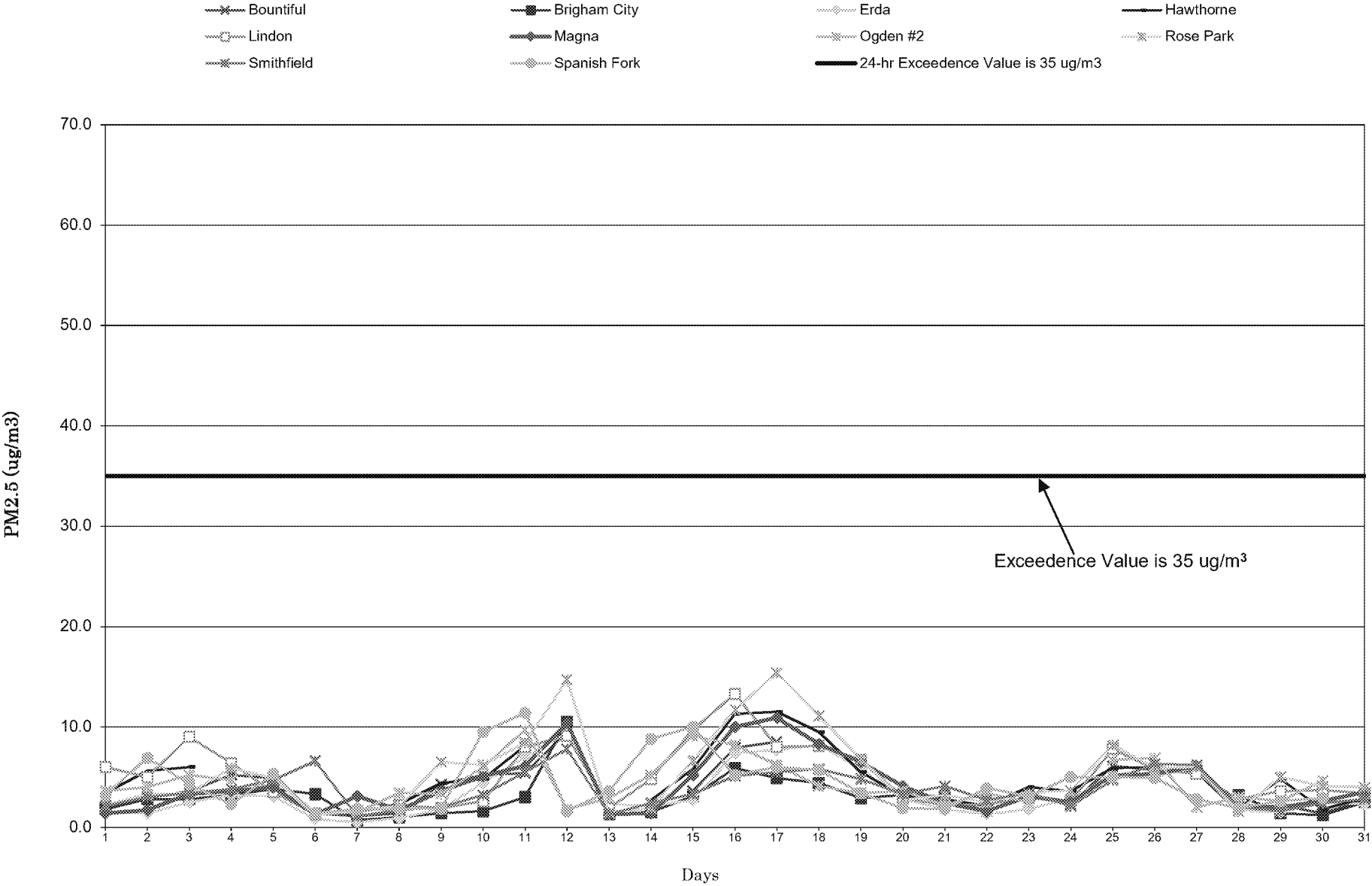
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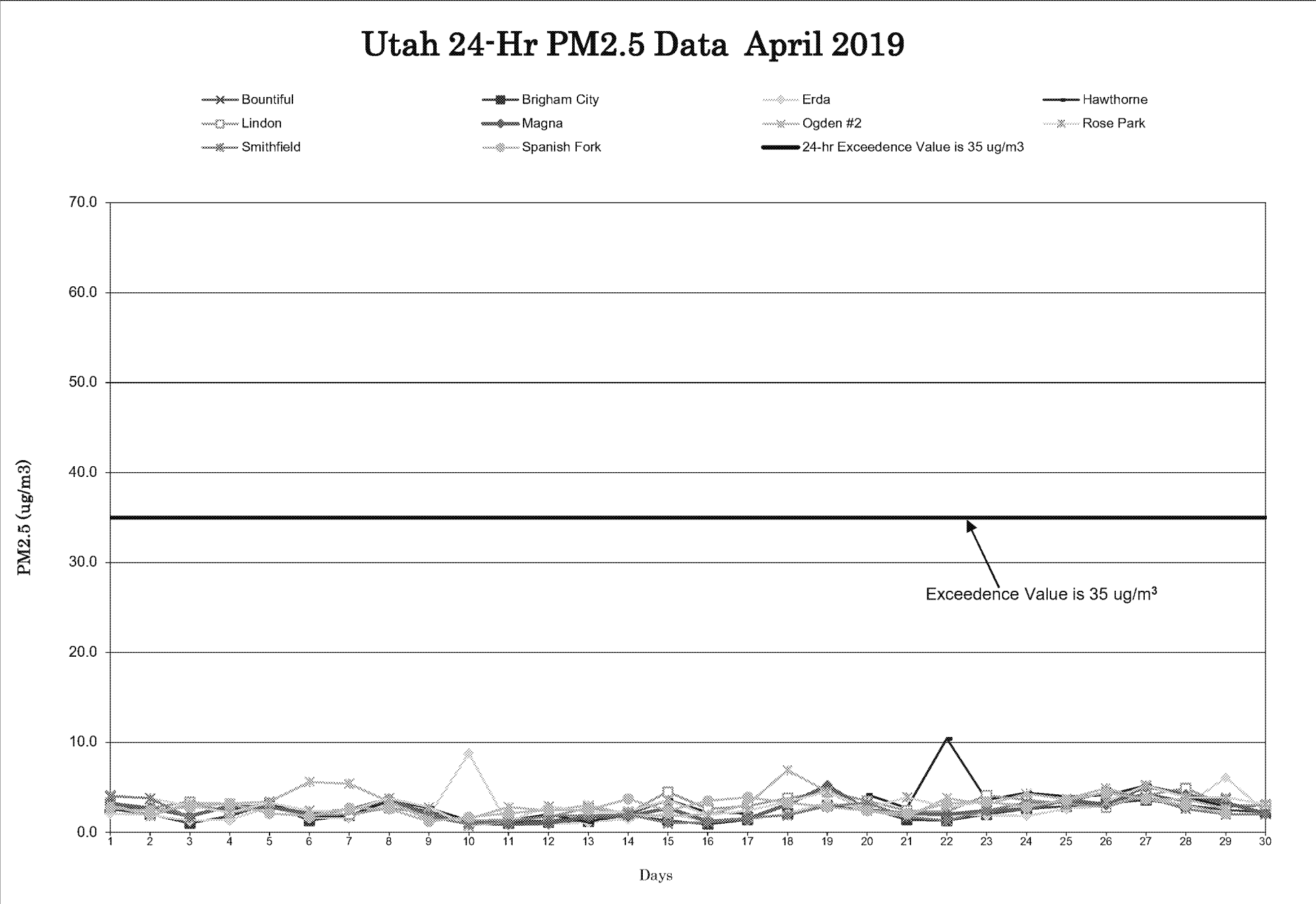
Breakdown Reports Received:.....	5
Compliance Actions Resulting From a Breakdown.....	0
Warning Letters Issued:	0
Notices of Violation Issued:.....	0
Unresolved Notices of Violation:	
US Magnesium	08/27/2015
Western Water Solutions	05/02/2017
Geneva Rock Products.....	10/20/2017
Norbest.....	11/15/2017
Strang Excavating	01/17/2018
US Magnesium	03/02/2018
Pacific Energy & Mining.....	03/02/2018
Gordon Creek Compressor Station.....	05/16/2018
JRJ Services	06/21/2018
JRJ Services	09/07/2018
Compass Minerals.....	12/10/2018
US Magnesium	01/08/2019
Mel Clark Construction	01/11/2019
Picasso Shutters	02/13/2019
Sunroc	02/28/2019
Compliance Advisories Issued:.....	3
No Further Action Letters Issued.....	1
Settlement Agreements Reached:	0

¹Miscellaneous inspections include, e.g., surveillance, level I inspections, VOC inspections, complaints, on-site training, dust patrol, smoke patrol, open burning, etc.

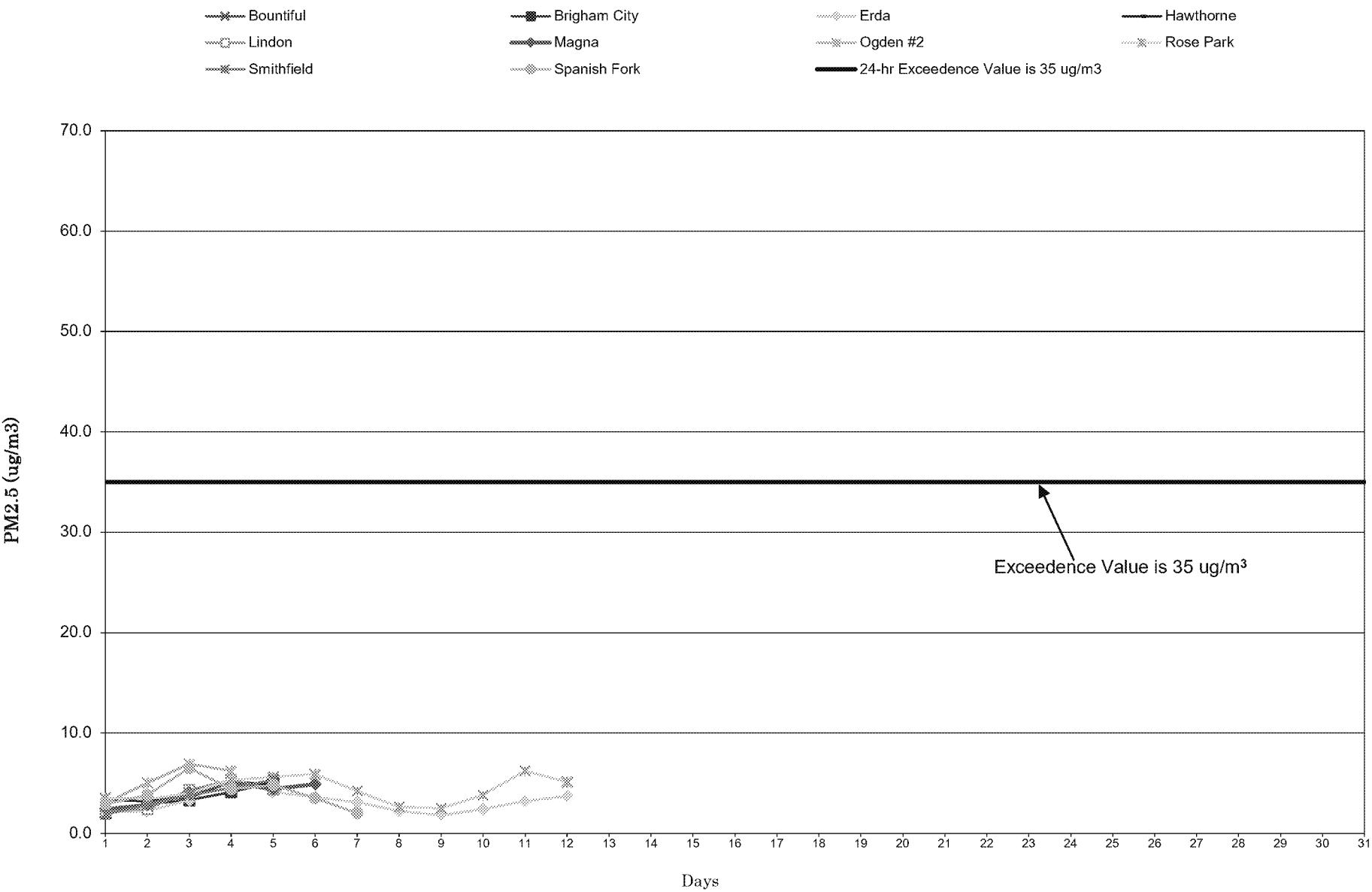
Air Monitoring

Utah 24-Hr PM2.5 Data March 2019

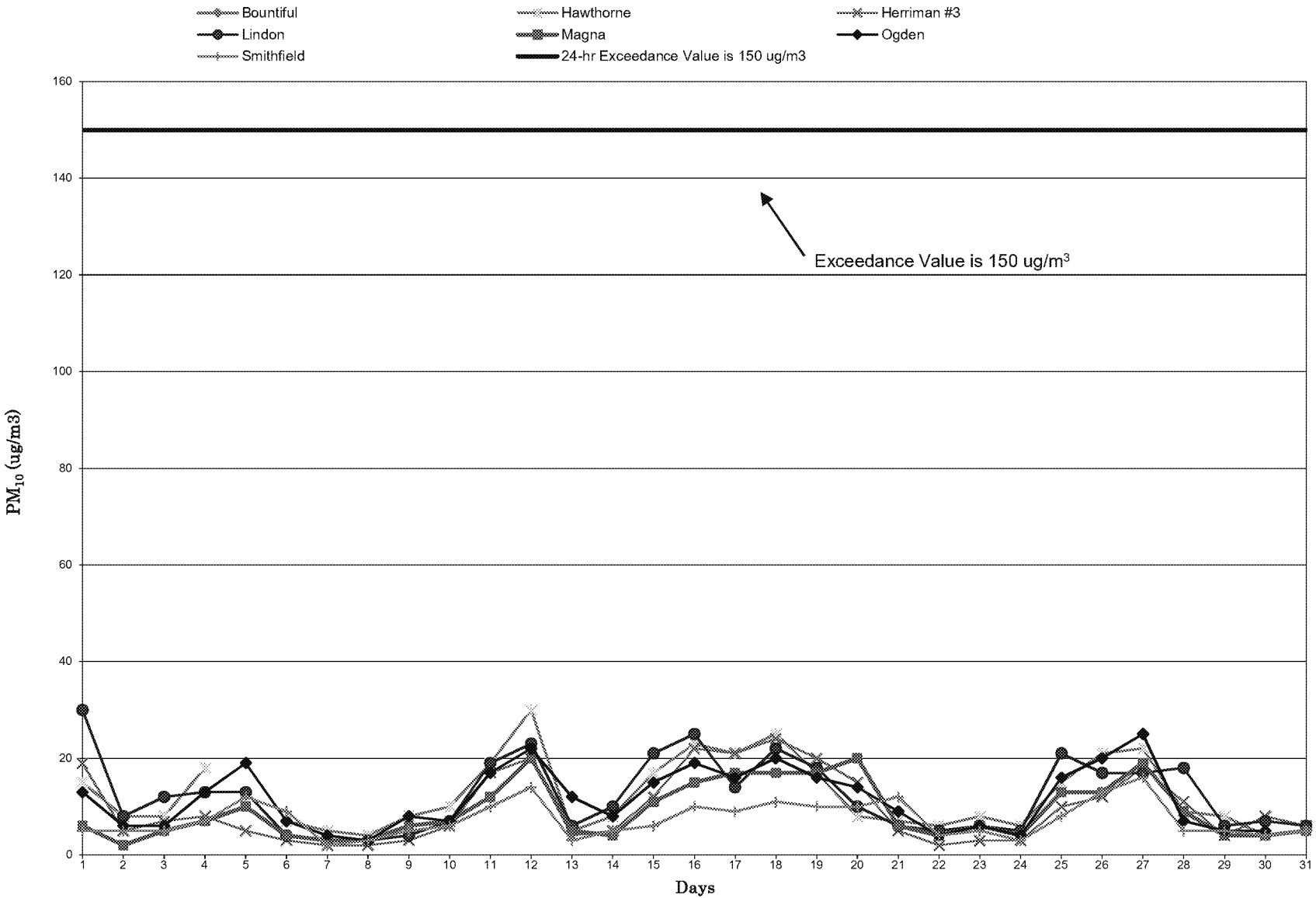




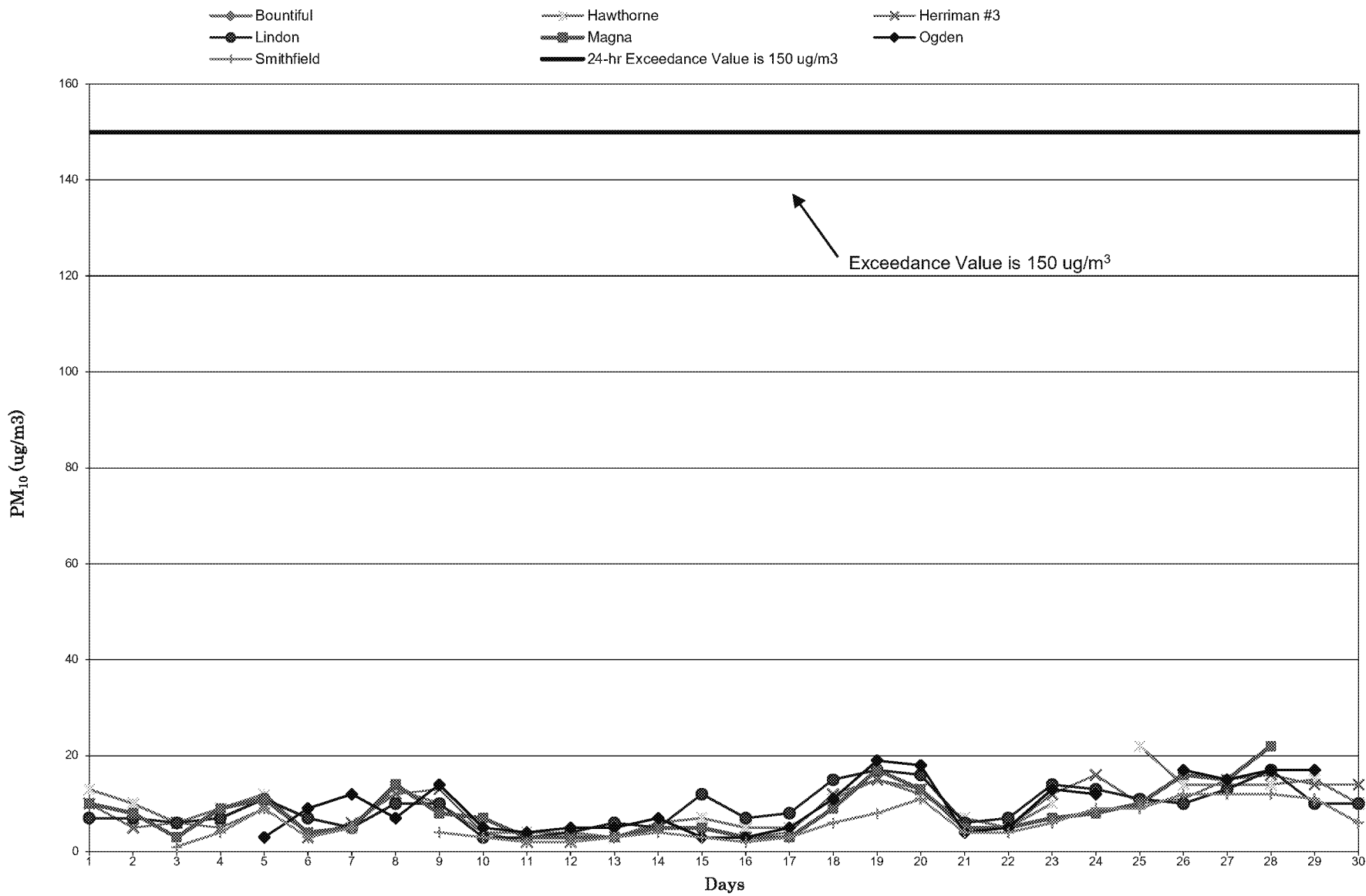
Utah 24-Hr PM2.5 Data May 2019



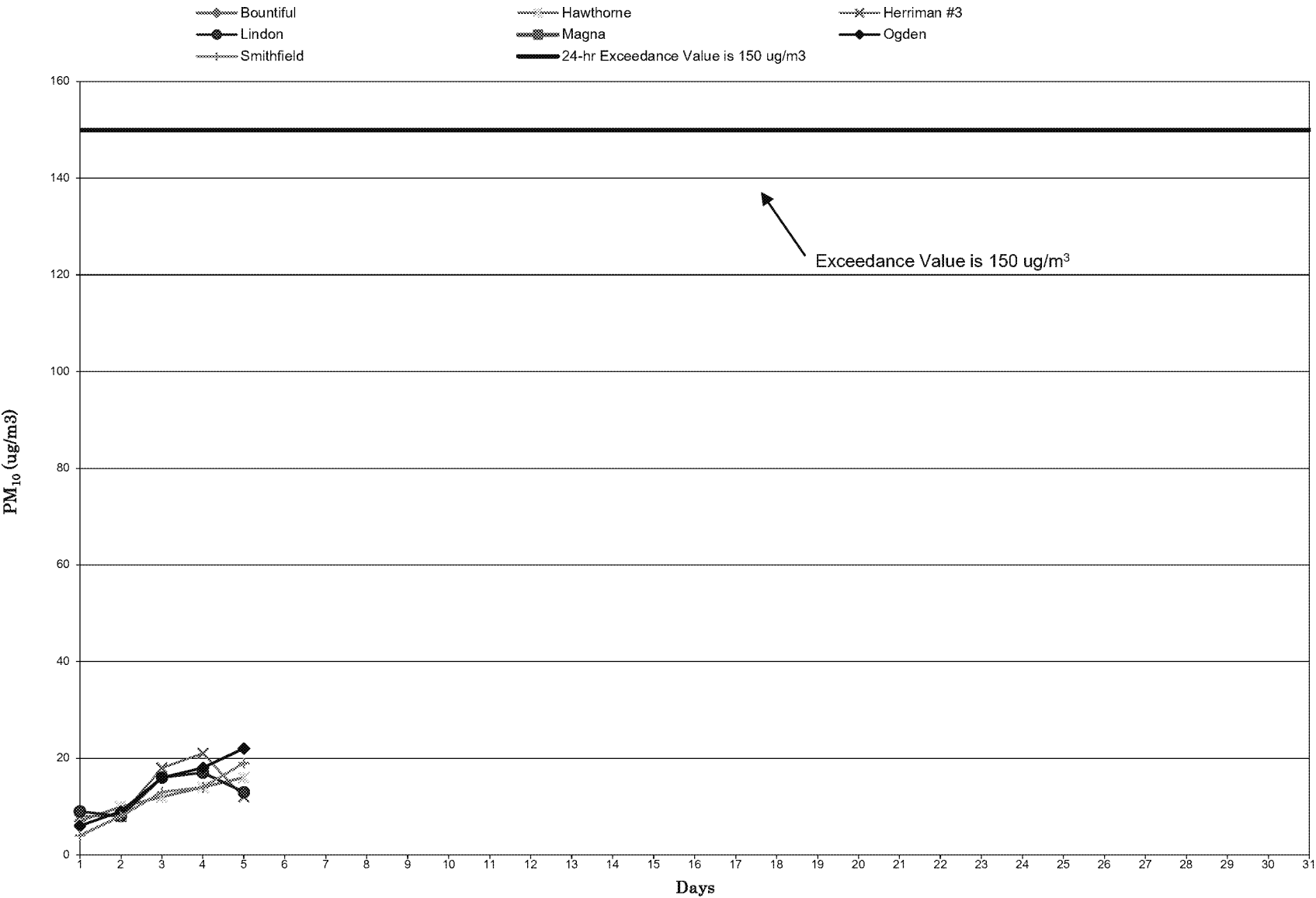
Utah 24-hr PM₁₀ Data March 2019

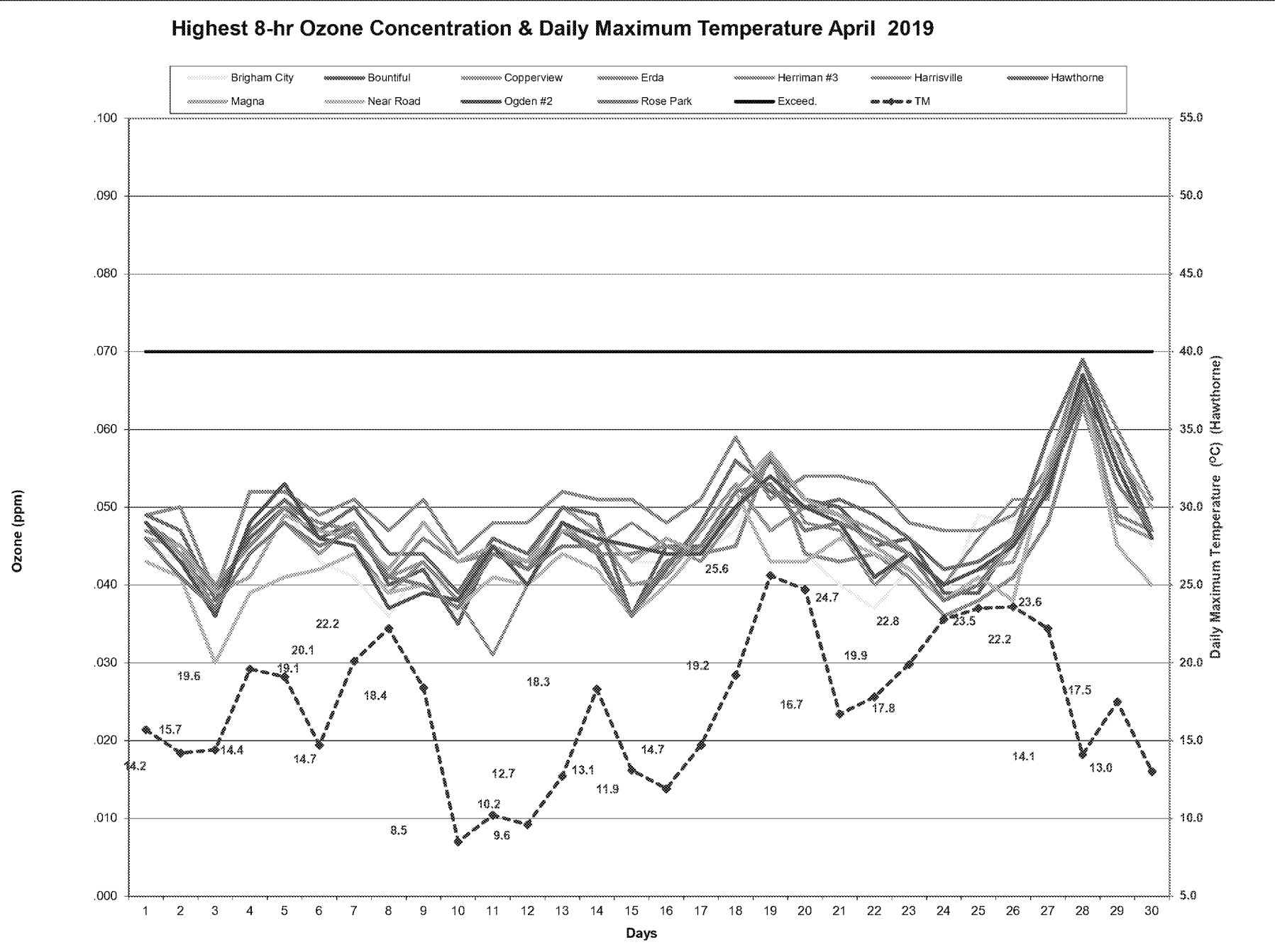


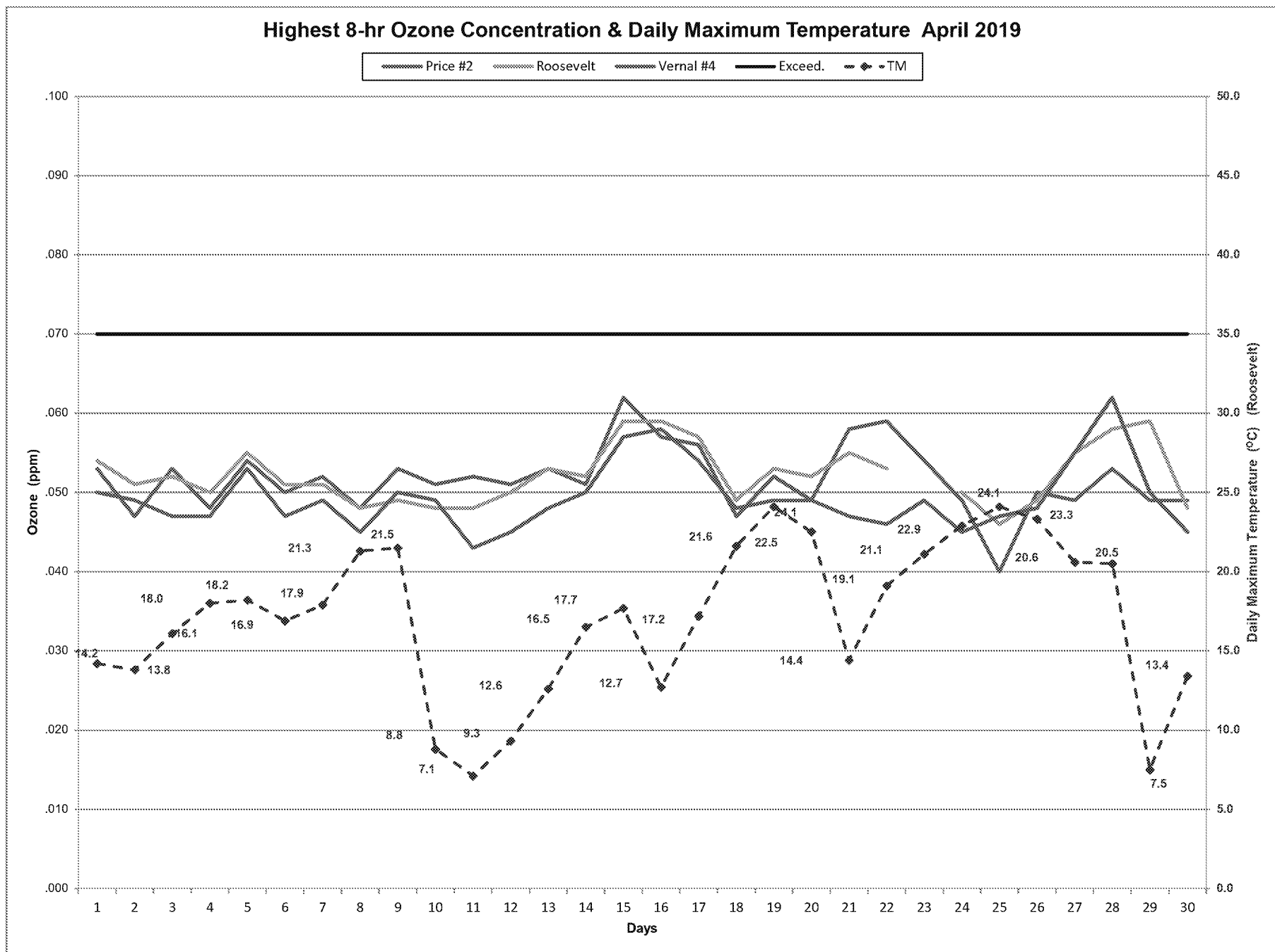
Utah 24-hr PM₁₀ Data April 2019

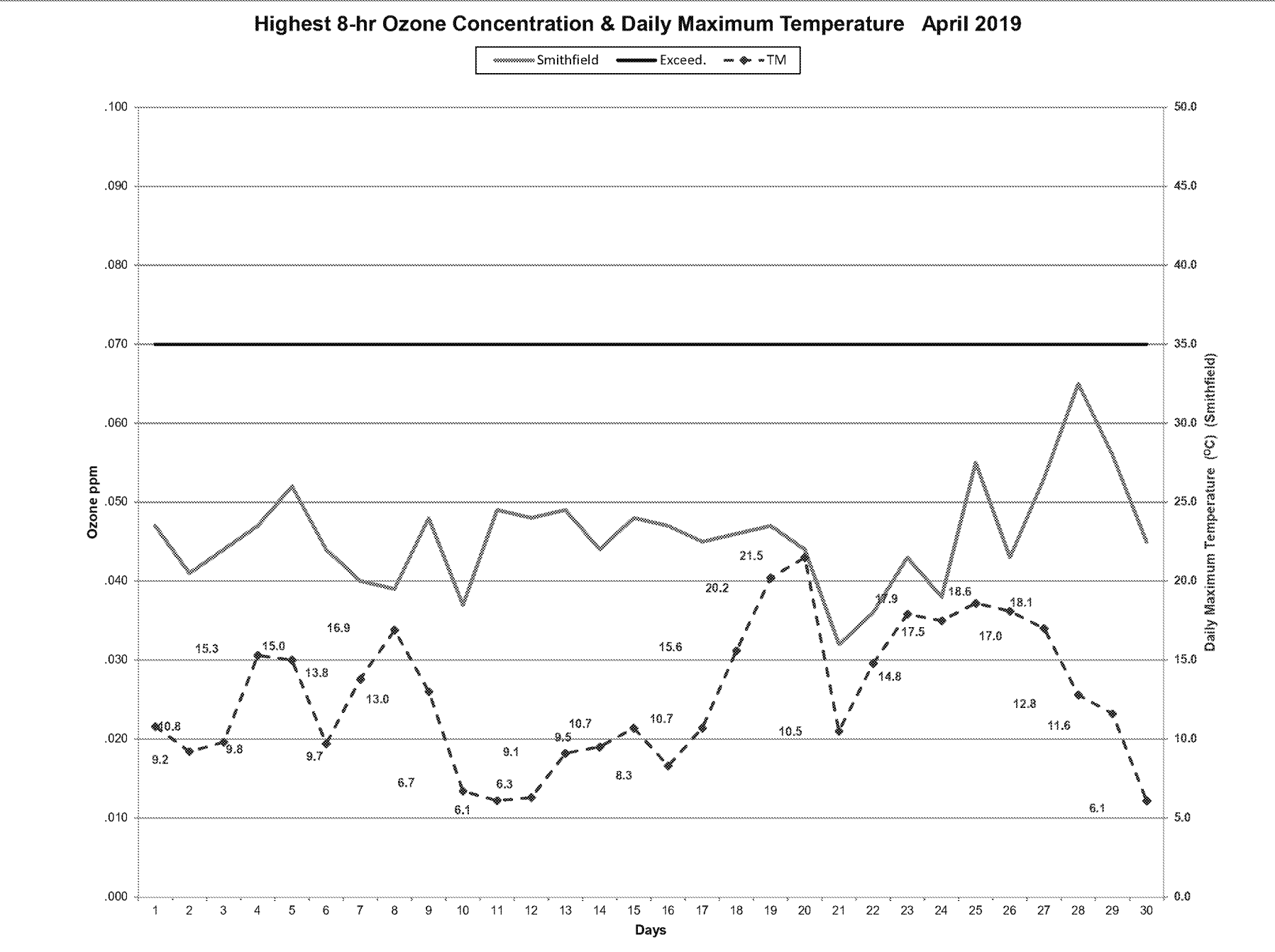


Utah 24-hr PM₁₀ Data May 2019

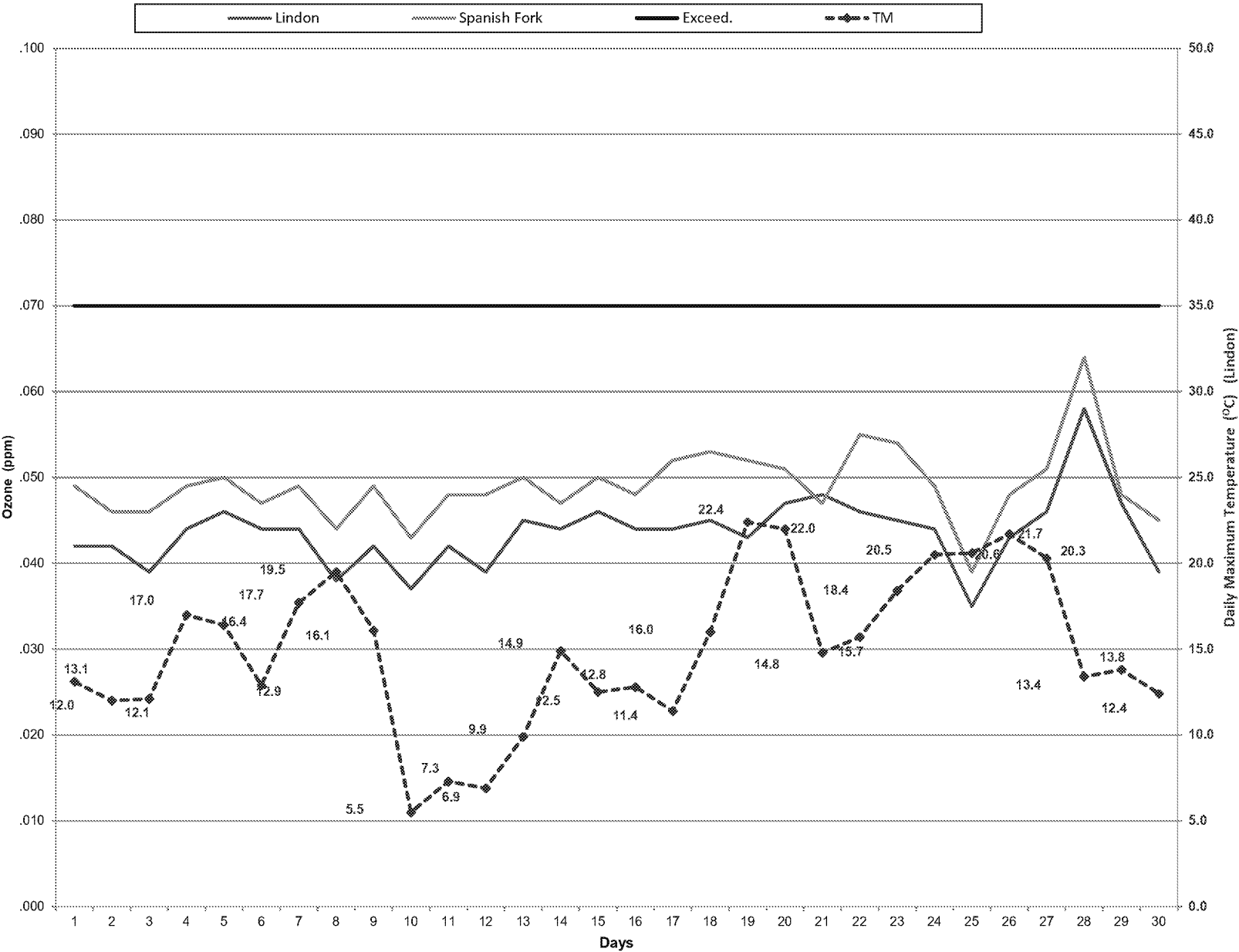


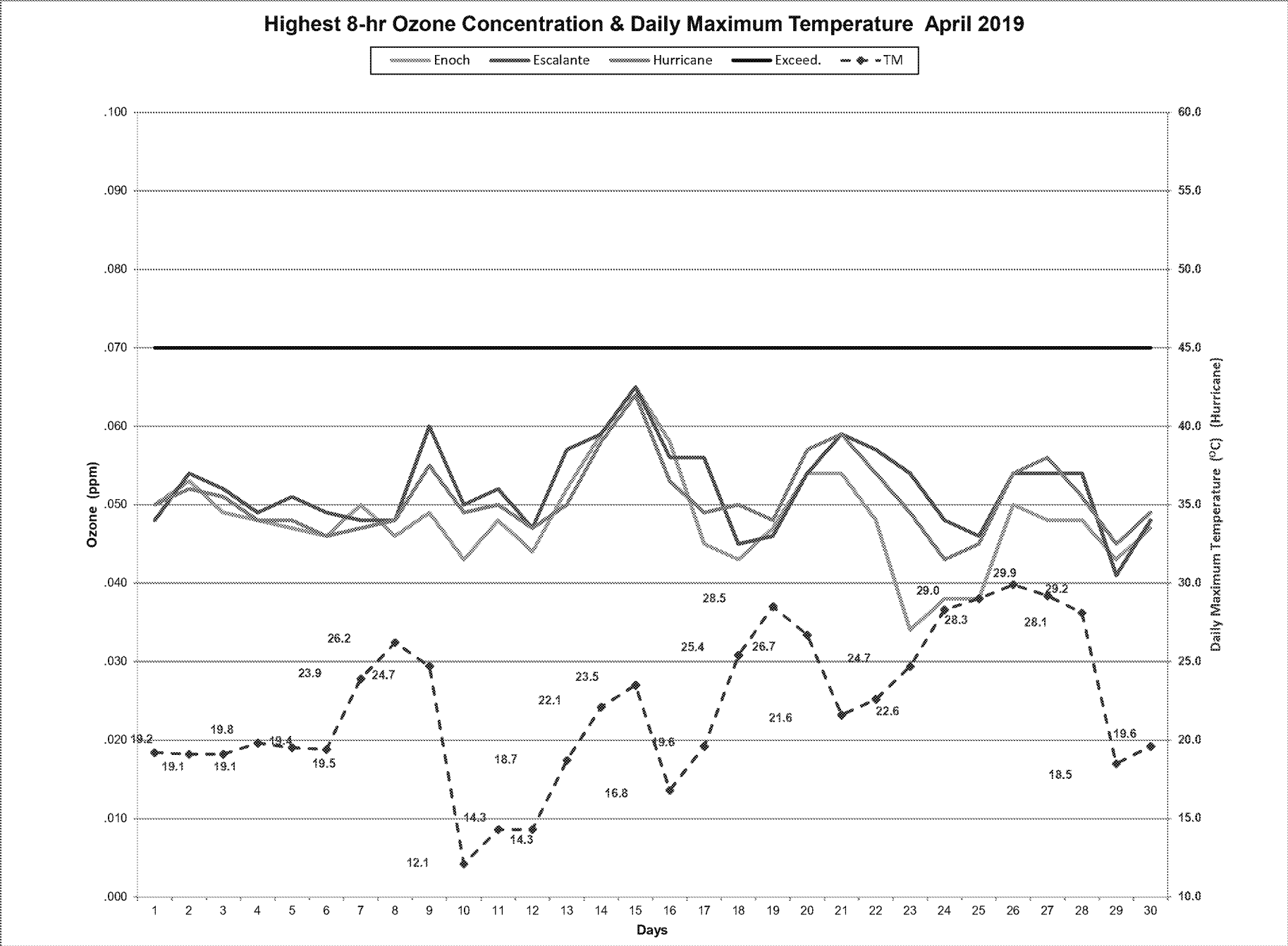


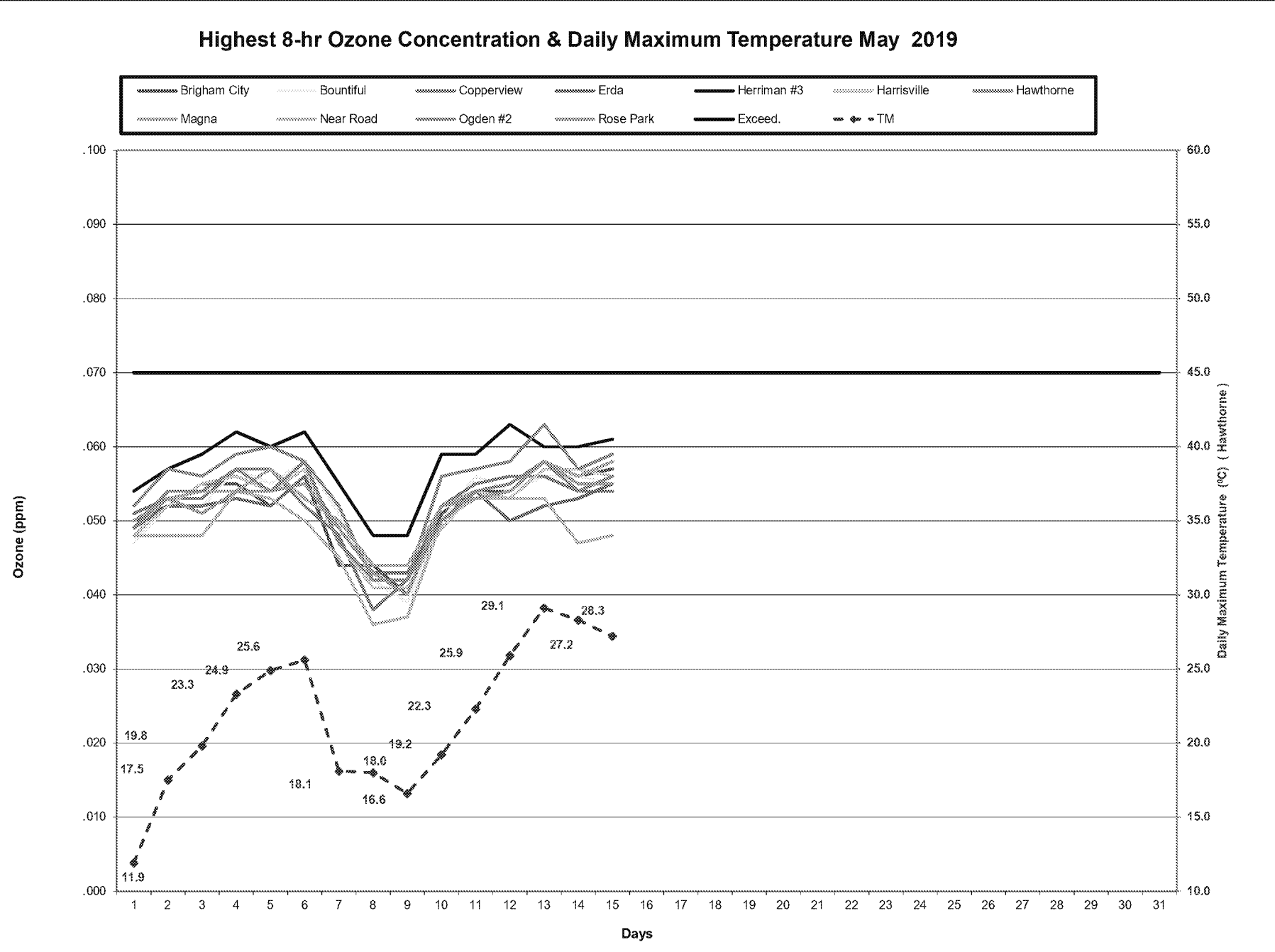




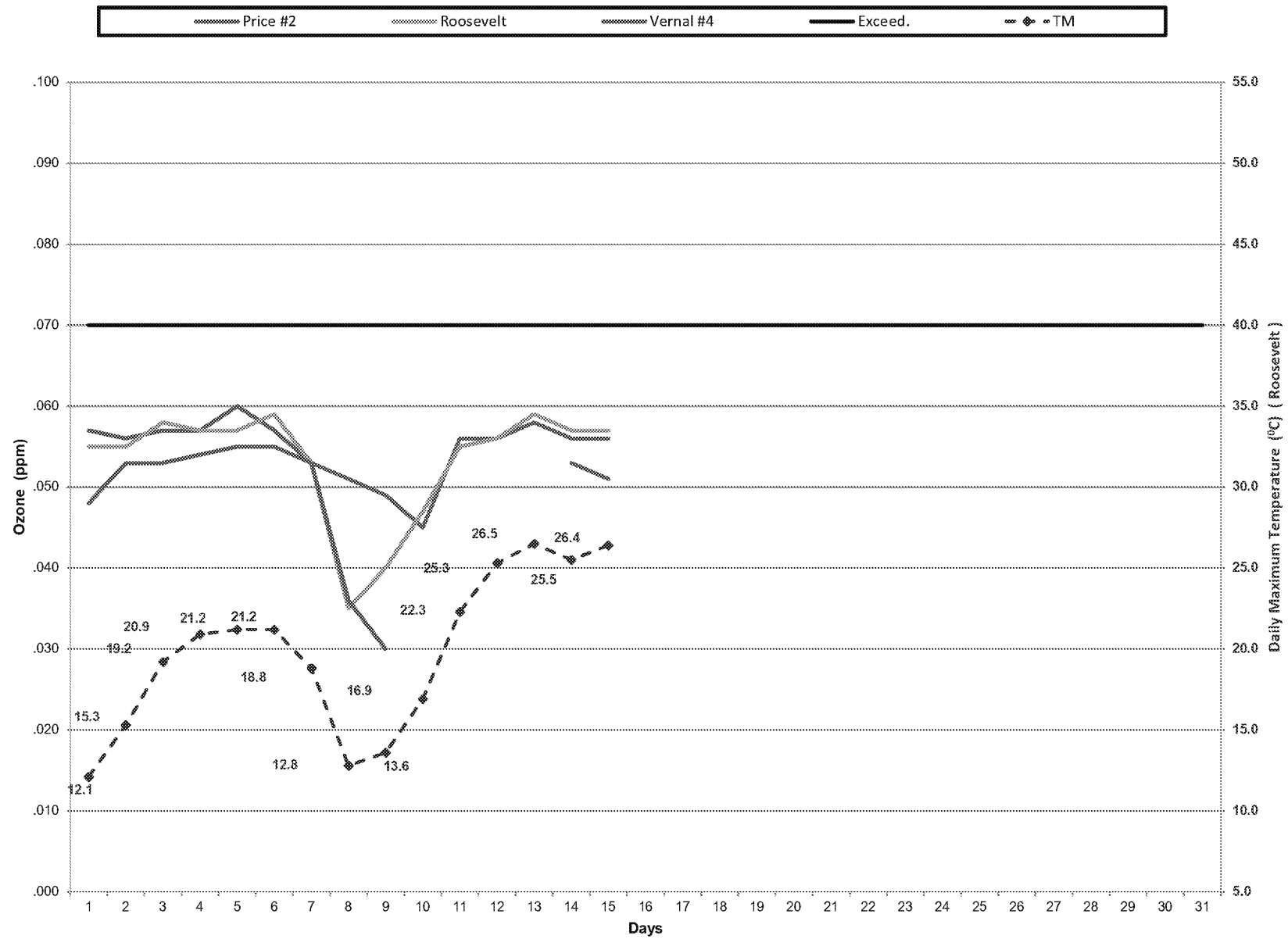
Highest 8-hr Ozone Concentration & Daily Maximum Temperature April 2019



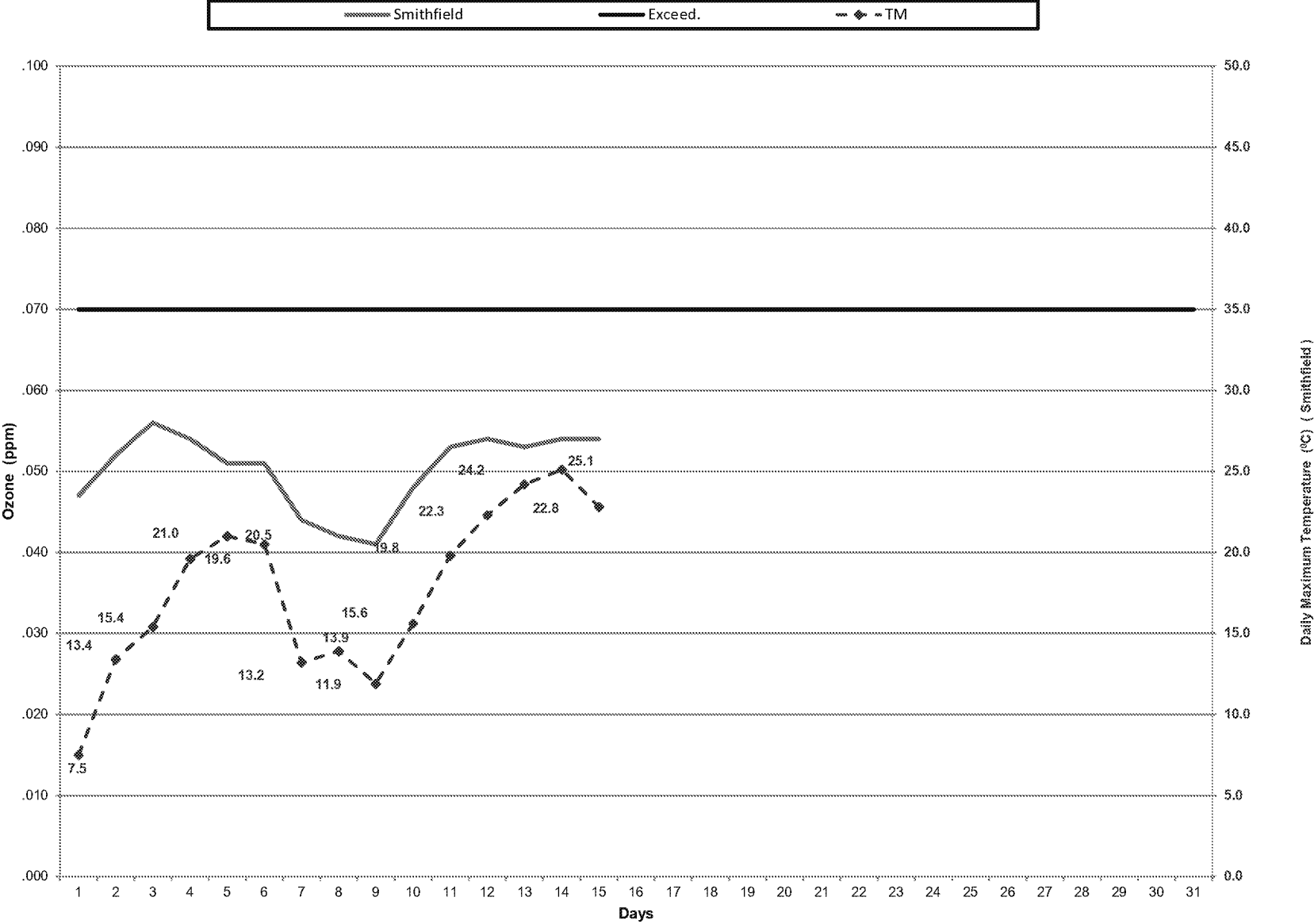


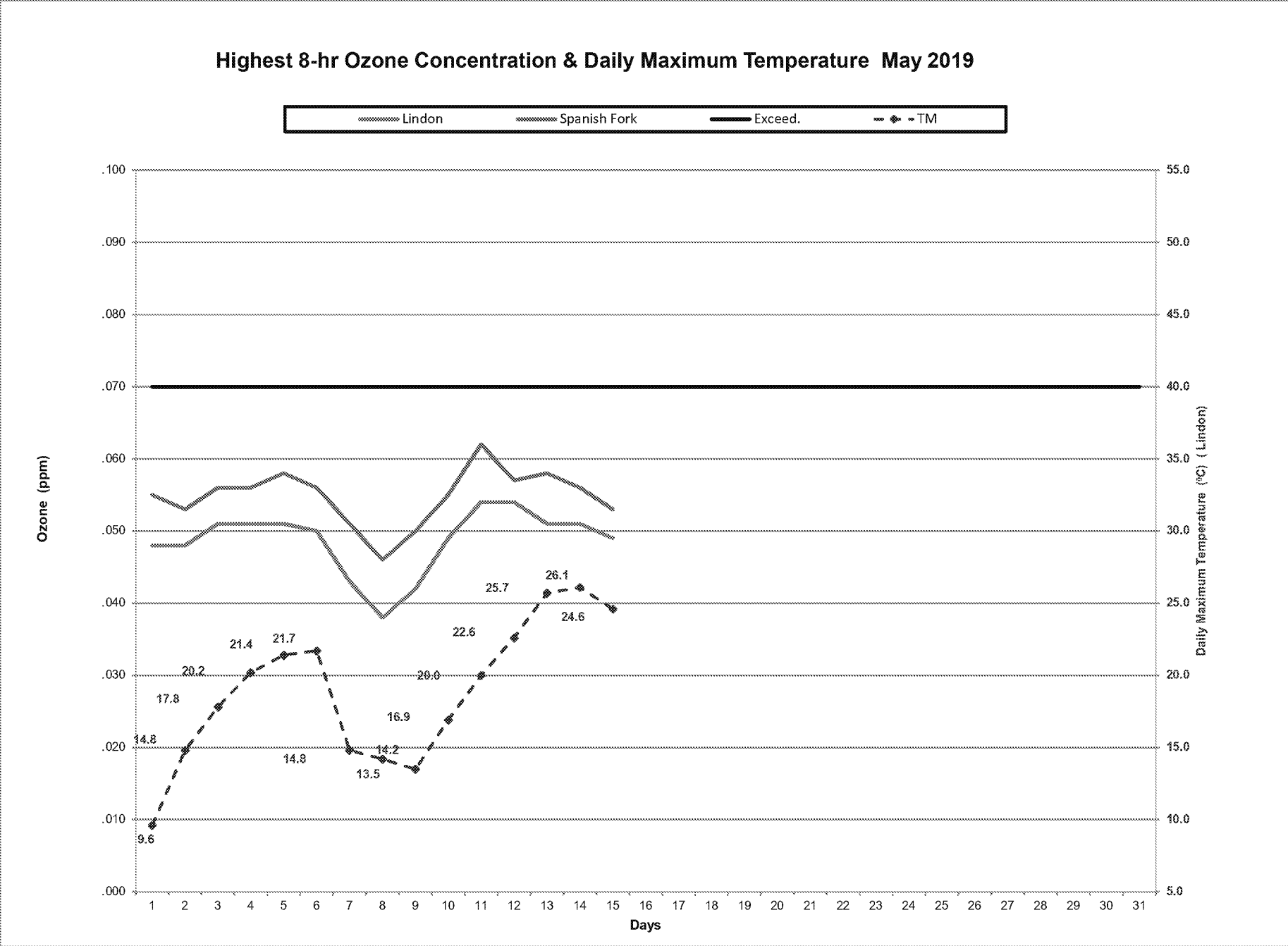


Highest 8-hr Ozone Concentration & Daily Maximum Temperature May 2019

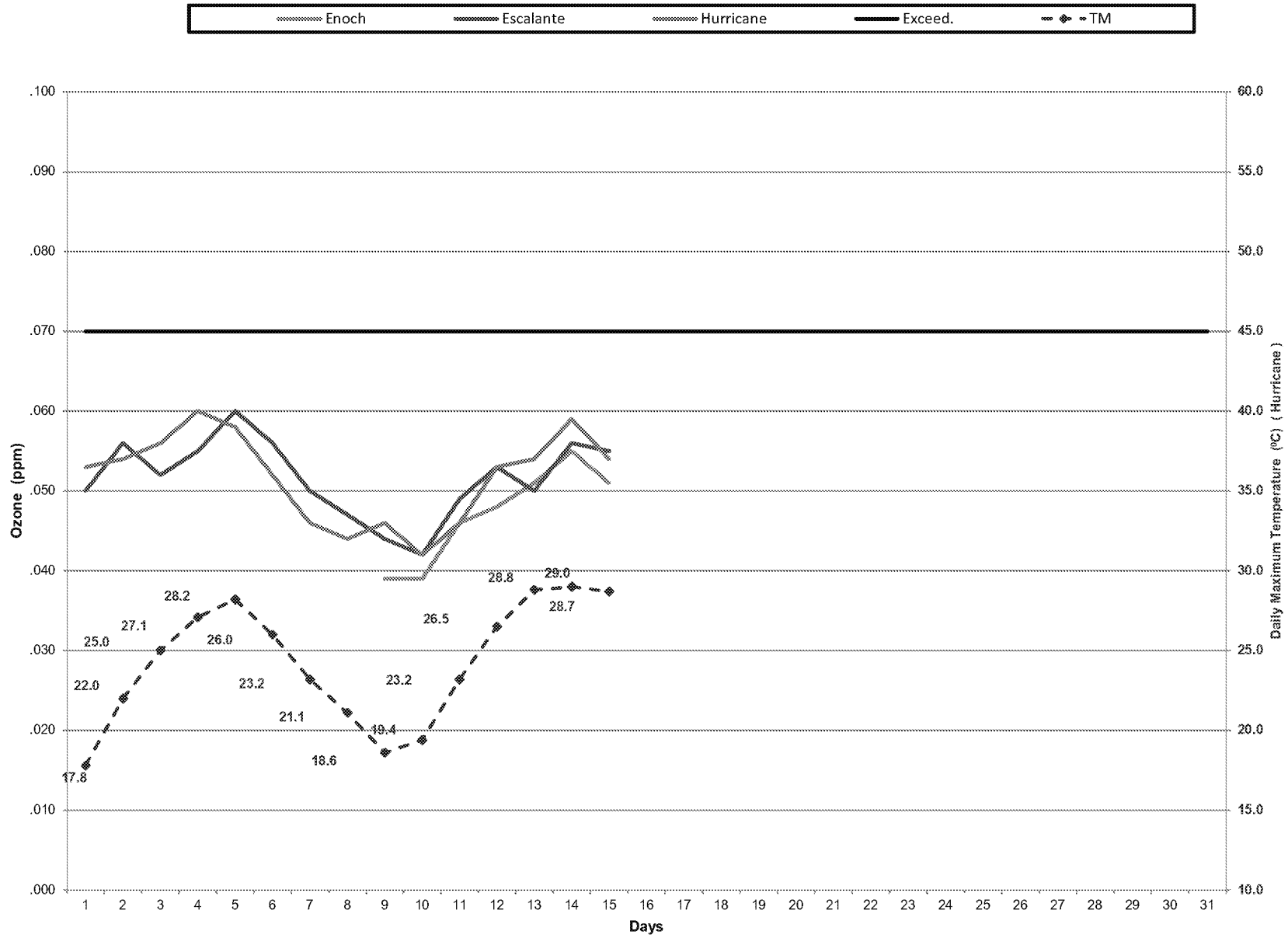


Highest 8-hr Ozone Concentration & Daily Maximum Temperature May 2019





Highest 8-hr Ozone Concentration & Daily Maximum Temperature May 2019



Message

From: Russ, Timothy [Russ.Tim@epa.gov]
Sent: 2/28/2019 5:51:41 PM
To: Joshua Greer [jgreer@brhd.org]; Mat Carlile [mcarlile@utah.gov]
CC: Joe Thomas [joethomas@utah.gov]
Subject: Draft Revised Language for Cache I/M BRHD Regulation: Preliminary EPA Comments
Attachments: Regulation Changes Feb 25, 2019.docx; EPA_OECA_Tampering_Memorandum_1A.pdf; Regulation Changes Feb 28, 2019.docx

Hi Josh,

I've reviewed your revisions to the I/M Regulation that were as in the 2/25/19 version. I've provided preliminary comments below and most appear to still be applicable to the 2/28/19 version you sent this morning (could be subtle changes in page numbers, etc.) I have not yet had an opportunity to share my preliminary comments with my colleagues in our Office of Transportation and Air Quality (OTAQ) and I will seek their review and thoughts/suggestions/comments.

Based on your email this morning, I see that you have sent your 2/28/19 revised Regulation to your Counsel for their review. I understand and appreciate your timing and need to make your Board mailout on Monday, 3/4/19. Therefore, I would suggest at this point in time, that once you have the final version you will send to your Board, please also forward that to me. I will then use that version, and any needed revisions to my below preliminary comments, to engage OTAQ in a review of the proposed Regulation. Also, likely after you review my below preliminary comments, there will be some that we'll need to discuss further.

With regard to your suggested language that went into section 9.6 of the Regulation:

"The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA to seek approval to incorporate the new technology as a testing method."

This certainly is fine to appear in the Regulation and we would be able to approve it. I just wanted to again express that the EPA is not precluding the BRHD from exploring, and potentially incorporating, new emission testing/sensing technologies. It's just how the language would appear in the Regulation for approval. Too, Mat and Joe both advised that for you to be able to explore new technologies, you must essentially establish that "procedure" in the Regulation in order to have the necessary authority.

I also need OTAQ's opinions/comments on the Regulation's revisions for covert audits/inspections; we'll all need to discuss that further after OTAQ's review.

Thanks for sharing the draft Regulation revisions and for giving us an opportunity to provide preliminary comments.

Please let me know if there are any questions.

Tim

Tim Russ
Environmental Scientist
USEPA Region 8

Air Program
1595 Wynkoop Street (8P-AR)
Denver, CO 80202-1129
Ph. (303) 312-6479
Fax (303) 312-6064
e-mail: russ.tim@epa.gov

EPA Preliminary Comments on the 2/25/19 Version of the BRHD's Cache I/M Regulation Revisions:

Document Page 5; Definition for:

“Compliance Assurance Inspection: An enhanced emissions inspection performed at the I/M Technical Center;”

EPA – Consider using a different term than “enhanced” emissions inspection as that typically is used in reference to and I/M240 test. Maybe instead use “A more detailed emissions inspection ...” Perhaps also include a reference in this definition to the provisions in Appendix D.

“Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list shall be inspected at the I/M Technical Center.”

EPA – Section 6.8 indicates the criteria for the development of this list are contained Appendix D; suggest adding a reference to Appendix D in the definition.

Document Page 8; Definition for:

“Waiver: Proof that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met”

EPA – In looking at section 9.5 of the Regulation and there will longer be TSI tests, would this definition perhaps be better worded as “Documentation of proof that a vehicle which has not been able to meet applicable test requirements, has met the applicable repair and/or adjustment requirements of section 9.5 of this Regulation.”

Document Page 9; the statement that appears:

“2.3 Comply with the federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S.”

EPA – The Cache I/M program follows *most* of the provisions in 40 CFR 51, Subpart S; however, EPA did give some margin with our approval of the Cache I/M program as it was not a mandatory CAA-required I/M program. We’d suggest the statement be modified to “Comply with the **applicable** federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S.”

Document Page 10; the statement that appears:

“4.2.3 The I/M Program Station has violated any provisions of this Regulation, or any rule, regulation, or Department policy properly promulgated for the operation of an I/M Program Station;”

EPA – It appears the intent of this statement is to capture overall current/future applicable requirements. Are there currently other rules, regulations, or applicable Department policies other than this Regulation?

Document Page 12; the deleted statement:

“The Certified Emissions Inspector signed and inspection form or certificate stating that he had performed the emissions test when, in fact, he did not”

EPA – We note that BRHD comments “We are working with DMV to produce electronic certificates that won’t be signed by the inspector.” Question: Should not the deleted statement stay in place until such time as DMV is actually producing electronic certificates?

Document Page 14; the statement appears:

“6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;”

EPA – As this section deals with vehicles being exempted from the I/M program, should this statement use “or more” rather than “or less?” It would seem that a gasoline pickup truck with a GVWR of less than 8,500 lbs and 1996 or newer should come under the requirements of the OBD I/M test.

Document Page 14; the statements appear:

“6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;”

EPA – It appears, in looking at the above and below statements, that heavy-duty gasoline vehicles (GVWR greater than 8,500 lbs.) from 1996 to 2007 are exempt, but that 2008 and newer vehicles that are between 8,500 lbs. GVWR up to 14,000 lbs. are required to do an OBD test?

“6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;”

Document Page 15; the statement appears:

“6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended, **or the Federal Clean Air Act.**”

EPA – Unless BRHD is going to include specific referenced sections in the Federal CAA that provide vehicle exemptions, we suggest deleting the phrase “... or Federal Clean Air Act.” and instead end this statement at “... 1953, as amended.”

Document Page 17; section 6.8 “Compliance Assurance List”:

EPA – We suggest (for consideration) that the presentation of requirements/information in this section may benefit from a reversal of sections 6.8.1. and 6.8.2. In that, section 6.8.2. gives

specific authority and criteria, in addition to those in Appendix D, for why a vehicle would need a Compliance Assurance Inspection; then based on the results of such an inspection, be placed on the Compliance Assurance List.

Document Page 19; the statements appear:

“8.1.1 Except as authorized by the Department, no person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.”

EPA – The intent of the bold text (new) above is not entirely clear. Who else would the BRHD authorize to perform tests? Assume they would need to possess some type of equivalent certificate to show proof they are competent to perform the OBD test?

Document Page 22; the statements appear:

“9.1 Except as authorized by the Department, the official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures are to be followed.”

EPA – The intent of the bold text (new) above is not entirely clear. Who else would the BRHD authorize to perform tests? Assume they would need to possess some type of equivalent certificate to show proof they are competent to perform the OBD test? Also, as the OBD test procedures are contained in Appendix D, would the above statement benefit from “... and Department approved inspection procedures (refer to Appendix D) are to be followed.”

Document Page 25; Waivers:

EPA – We had approved the 2013 version of the Regulation with the waiver cut-off expense rate of \$200 which correlates to a Basic I/M program (ref. 40 CFR 51.360). Too, we acknowledge that since 2014 BRHD has seen a declining amount of waivers issued (we believe there were only 57 in 2017.) As no waivers will be needed beginning in 2021 for 1995 and older vehicles and all others will be based on OBD tests, would this be a time to reconsider an increase the waiver rate cost? (Suggest reviewing 40 CFR 51.360.)

Document Page 26; the statement appears:

“9.5.3 A Waiver shall only be issued by the Department unless the Department determines other acceptable methods of Waivers.”

EPA – The intent of the above statement is unclear. Too, what other “acceptable methods” are being considered by BRHD?

Document Page 27; section 10 “Engine Switching:”

EPA – The first sentence of this section generally refers to EPA policy on engine switching. We suggest that this section may benefit from referring to the specific EPA policy and information as included in: EPA’s Office of Enforcement and Compliance Assistance (OECA) Engine Switching Fact Sheet: <https://www.epa.gov/enforcement/engine-switching-fact-sheet> and our OECA Engine Switching Fact Sheet referenced Memorandum 1A (please see attached .pdf file) Also, as written, it would appear that section 10 would apply to all vehicles regardless of model year. Would the intent then be to include all newer OBD equipped vehicles?

Document Page 28; section 12 “Quality Assurance,” the statement appears:

“12.2 A covert inspection shall be made by a representative of the Department to verify compliance with this Regulation. Covert inspection frequency will be based on the needs of the Department.”

EPA – The revised language departs from the prior language requiring annual covert audits. As written, the new language provides a certain level of “director discretion” and it is unclear how the new language would address or meet the intent of covert audits as described in 40 CFR 51.363 (esp. 51.363(a)(4)).

Document Page 31; the statement appears:

“14.6 The Department **may request** that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle’s registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.”

EPA – We would appreciate clarification of the term “may request” as it is our understanding that if a vehicle does not pass an emissions test, cannot be exempted, or qualify for a waiver, the DMV should exercise registration denial.

Document Page 31; under section 16 “Effective Date,” the statement appears:

“This Regulation shall become effective on January 1, 2021 as adopted by the Bear River Board of Health.”

EPA – We note there are a number of revisions in the Regulation that are not related to the elimination of the TSI test in 2021. Just to be clear, the provisions of the prior approved version of the Regulation continue to be in place and effective up until 1/1/2021.

Document Page 40; the section entitled “**Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures**”:

EPA – Please be advised that when the Regulation is eventually submitted for EPA approval into the SIP, we will not be taking any approval action on this section of the Regulation. We may consider acknowledging the potential SIP-strengthening aspects of the diesel OBD test, but will not be able to approve it.

Document Pages 42 and 43; under the headings “Compliance Assurance Inspection” and “Referee Inspection”:

EPA – On first read, both of these sections do have merit and we appreciate the potential addition to the Regulation. We will be discussing these sections with our colleagues in OTAQ and would like to know are these new sections just unique to the BRHD’s Regulation or do they draw from an area in 40 CFR 51, Subpart S Inspection/Maintenance Program Requirements, or perhaps from one or more of the other four Utah I/M program counties?

Document Page 77; section entitled “APPENDIX F – WAIVERS FOR “NOT READY”:

EPA – One question we have here is if a waiver granted under this section of the Regulation, does the BRHD consider it to be re-occurring, or is it considered the same as a waiver granted under section 9 of the Regulation in that a waiver will only be granted once?

Joshua Greer jgreer@brhd.org

2/26/19

Cache County Emissions

Tim,

I understand that you have been talking with Joe Thomas regarding the proposed Cache County emissions regulation. As per your request I am submitting some language for your comments.

1 - I talked extensively with Joe regarding new testing technologies, including Remote OBD. I have removed the language from the regulation that reads, "Except as authorized by the Department . . ." Would you be comfortable with this language instead?

"The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA to seek approval to incorporate the new technology as a testing method."

It is absolutely our intent to go through the process in getting new technologies approved. I appreciate your willingness to work with us through the process. I believe these new technologies could be cost effective and enhance our program going forward. We are very interested in looking at new technology and making it work. That's a little difficult when we're bound by laws and guidelines that were developed decades ago. Hopefully we can find success as we work through these studies.

2 - I also talked with Joe regarding our covert inspections. As a background, we currently have about 50 stations. We do not have a tampering inspection component to our inspection except 1998-2006 diesels. If I follow the guidelines regarding covert inspections I am required to send a vehicle to the stations that is set to fail and see how the inspectors respond. When I send a gasoline vehicle I don't have many options. Removing the MIL bulb is about the only thing I can do - that's the only part of the inspection where pass/fail is based on inspector discretion. I have sent out some tampered diesel vehicles as well. Of course cost is a factor in a small program and I can't afford to buy a big diesel truck as tamper with it. We end up getting a VW car and removing devices. This usually puts up a red flag when it's inspected.

I believe that we would be much better suited utilizing the covert inspection as an investigative tool. We collect plenty of electronic inspection data, registration data, etc. that tips us off to problems at a station. This is where a covert inspection would be better used. Would this language work for you?

"A covert inspection shall be made by a representative of the Department to verify compliance with this Regulation. The Department will utilize registration data, inspection records, and other pertinent information to determine when an I/M Program Station will receive a covert inspection. A covert inspection is a tool the Department may utilize while investigating violations of this Regulation."

3 - Joe mentioned that you had some questions regarding the Compliance Assurance Inspection. Please see Appendix D for a better description of what that is. Let me know if you have any other concerns.

4 - Timeline. I am hoping that you will do a quick review of the regulation and point out any major issues. This is what I'm hoping to see in the next few days. I have to get this document ready for my board. Our board meeting is March 13. At this time they will be introduced to the proposed language. We will still have to go through a public comment period and I don't anticipate the regulation being complete until April or May. That should give EPA plenty of time to go through the official comment process. Please don't think I'm asking for official EPA comments in the next few days. I'm just looking for your help identifying major issues, as you've already done. Please feel free to get those comments back

to me directly so I can address them before we send a draft regulation to the board that will go out for official comment. I would much rather take care of those items first.

Thanks for your help with all of this and let me know what other questions you have for me.

Joshua Greer, LEHS
Bear River Health Department
435-792-6572



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

September 4, 1997

Addendum to Mobile Source Enforcement Memorandum 1A

SUBJECT: Tampering Enforcement Policy for Alternative Fuel Aftermarket Conversions

A. Purpose The purpose of this document is to clarify and revise the U.S. Environmental Protection Agency's (EPA's) "tampering" enforcement policy for motor vehicles and motor vehicle engines originally designed to operate on gasoline or diesel fuel and subsequently modified to operate exclusively or in conjunction with compressed natural gas (CNG) or liquified petroleum gas (LPG or propane), hereinafter referred to as "alternative fuels". The provisions of this Addendum shall apply to all persons subject to the tampering prohibition of Section 203(a) of the Act. For the purpose of this policy Addendum, the term "manufacturer" will apply to any person who designs, produces, and/or assembles components for converting vehicles or engines to operate on alternative fuels and is responsible for complying with all applicable requirements of this policy Addendum.

B. Background: EPA's policy is and has been that any alteration from an original configuration of a vehicle or engine as certified under Title II of the Act may constitute tampering under Section 203(a)(3). Routine maintenance and repair of vehicles and engines requires the use of replacement parts which may be non-original or "aftermarket" parts or systems. EPA's Office of Enforcement and General Counsel issued Mobile Source Enforcement Memorandum 1A (Memo 1A) on June 25, 1974 to provide guidance to covered parties regarding how the Agency intended to enforce the "tampering" prohibition under Section 203(a)(3) of the Clean Air Act (Act) with respect to maintenance and the use of aftermarket parts.

Memo 1A provides, in part, that the use of an aftermarket part, alteration or add-on part will not constitute tampering if the dealer has a "reasonable basis" to believe that such acts will not adversely affect emissions performance. It also provides specific procedures or options by which the dealer would have a "reasonable basis". One available procedure is emissions testing performed in accordance with "40 CFR 85" (subsequently revised and incorporated under 40 CFR Part 86) demonstrating compliance with emission standards for the useful life of the vehicle or engine. An alternate option is that "a Federal, state or local environmental control agency represents that a reasonable basis exists" based on testing done in accordance with procedures specified by that agency. Many vehicles converted from gasoline fueled to CNG or propane have relied on the second option utilizing procedures established by California or Colorado for demonstrating emissions compliance.

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EPA has recently become aware of federal emission test data generated under a program conducted by the National Renewable Energy Laboratory (NREL) which indicate that a significant number of these vehicles modified to run on alternative fuels may be exceeding one or more applicable federal emission standards. The installers involved in the NREL program had attempted to comply with Memo 1A by using conversion systems certified by the state of California under the "California Exhaust Emission Standards and Test Procedures for Systems Designed to Convert Motor Vehicles Certified for 1993 and Earlier Model Years to Use Liquefied Petroleum Gas or Natural Gas Fuels" (pre-1994 California Procedures). EPA has subsequently reviewed emission test data from other sources which generally substantiate the NREL results.

In response to concerns raised by these data, the Agency conducted a public stakeholders meeting on February 21, 1997, with representatives of the affected industries, regulatory agencies and interested fleet operators. The purpose of the meeting was to discuss these data and the causes of the emission failures as well as to explore all available options to identify and remedy the problems. Many reasons were provided for the emission problems, including inadequate initial testing, insufficient durability evaluations, overly broad vehicle application based on limited testing, inadequate systems/parts specifications, improper installation and fuel variability. The concerns of the affected industries and fleets subject to several alternative fuel statutory mandates were also discussed.

The most significant conclusion reached at that meeting, and from extensive data review and discussions subsequent to that meeting, was that the pre-1994 California and Colorado procedures as currently structured do not provide an adequate demonstration or assurance that a vehicle or engine modified to operate on an alternative fuel using an aftermarket conversion system will comply with the applicable emission standards for its useful life. As a result of the above and in light of the number of vehicles and engines that may be converted to alternative fuels in the near future, EPA believes it is appropriate to issue this Addendum to Memo 1A (this Addendum) to provide additional guidance to the regulated community, including manufacturers and installers of alternative fuel conversion systems.

C. Revised Policy: Effective immediately, EPA will no longer accept a representation based on the pre-1994 California Procedures for alternative fuel conversion systems or on the test procedures under Colorado Regulation No. 14 in effect prior to the date of this Addendum as a "reasonable basis" under paragraph 3(c) of Memo 1A. Consequently, any future installation of an alternative fuel conversion system, or the modification of any motor vehicle or motor vehicle engine in compliance with Title II of the Clean Air Act to operate exclusively or in part with an alternative fuel, or the causing thereof, may constitute tampering under Section 203(a) of the Act, where the installer or manufacturer has relied exclusively on a representation by Colorado or California, as described above, that a reasonable basis exists in accordance with paragraph 3(c) of Memo 1A. Effective immediately, the "reasonable basis" under paragraph 3 of Memo 1A that EPA agrees may be relied on by any person, including a manufacturer, installer or operator, when converting, or causing the conversion of, a motor vehicle or motor vehicle engine to operate on an alternative fuel is limited to one of the three options listed below.

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1. A Federal Certificate under 40 CFR Part 86 demonstrating compliance with the applicable standards or under 40 CFR Part 88 demonstrating compliance with Clean Fuel Fleet standards for each engine family to be converted in accordance with 40 CFR Part 85, Subpart F; or

2. A Retrofit System Certification under the “California Certification and Installation Procedures For Alternative Fuel Retrofit Systems for Motor Vehicles Certified for 1994 and Subsequent Model Years” for a conversion system installed and tested under the above procedures on a vehicle or engine from a “50-state engine family” for use nationwide, or for a conversion system installed and tested under the above procedures on a vehicle or engine from a “California engine family” for use in California only; or

3. Until December 31, 1998, the use of an alternative fuel conversion system designed, tested and installed on a single engine family, or multiple engine families as provided under paragraph b.(4) below, if testing is completed by March 31, 1998, as follows:

a. With the alternative fuel conversion system installed on the certified engine family, the manufacturer shall perform, or cause the performance of, one federal emission test while operating with the alternative fuel and one test with the original certification fuel, if dual fuel operation is retained, in accordance with the applicable test procedures under 40 CFR Part 86 or Part 88 for that class and model year vehicle or engine. Prior to testing, the vehicle or engine shall be operated with the conversion system installed for at least the number of miles or hours equal to the service accumulation period needed to stabilize the emission control system specified by the original manufacturer in its certificate application submitted to EPA. EPA encourages manufacturers to conduct at least one baseline emission test with the certification fuel prior to conversion to ascertain that the vehicle or engine meets the applicable standards.

b. (1) With the application of an appropriate deterioration factor (DF) to the above test results, the vehicle or engine shall meet the applicable federal exhaust emission standards to which the vehicle or engine was originally certified. The DF shall be determined either based on full useful life durability testing, predictions based on engineering judgement for a similar light duty vehicle or heavy-duty engine with a similar emission control system using the same alternative fuel conversion system, or determined in accordance with the appropriate protocol contained in the “Dear Manufacturer” letter of September 27, 1995 - Assigned Deterioration Factors for Gaseous-Fueled Vehicles and Engines, identified as CD-95-14. For heavy-duty engines with aftertreatment (such as a catalyst), the deteriorated emissions are calculated by *multiplying* the DF with the exhaust emission results. For heavy-duty engines without aftertreatment, the deteriorated emissions are calculated by *adding* the DF with the exhaust emission results. For a vehicle or engine converted and tested prior to accumulating 50% of its useful life, the manufacturer shall apply the full DF. For a vehicle or engine converted and tested subsequent to accumulating 50% of its full useful life, apply a DF that is the midway point between no DF and the full DF. For example, an additive DF of 1.0 may become 0.5 and a multiplicative DF of 2.0 may become 1.5. For a vehicle or engine converted and tested subsequent to accumulating its full useful life, apply no DF.

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(2) For heavy-duty engines used in vehicles with a gross vehicle weight rating (GVWR) less than or equal to 10,000 lbs, the manufacturer may demonstrate compliance with the applicable light-duty truck standards in accordance with the preceding paragraph.

(3) In lieu of engine dynamometer testing for on-highway heavy duty vehicles with a GVWR less than or equal to 14,000 lbs, the manufacturer may conduct two or three emission tests as described below in accordance with the most current amendments to “California Exhaust Emissions Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles”. These shall consist of one baseline test using the certification fuel prior to conversion, one test after conversion with the alternative fuel and one test after conversion with the certification fuel if the vehicle is intended to be dual fuel. The two tests after conversion shall not result in any exhaust emissions that exceed 1.10 times any of the baseline emission levels. In the case of pure CNG operation, the after conversion NMHC emissions shall not exceed 0.9 times the THC emissions before conversion. For heavy-duty vehicles operating on a mixture of CNG and either diesel fuel or gasoline, the conversion system manufacturer should contact EPA’s Mobile Source Enforcement Branch to determine the appropriate ratio of NMHC emissions after conversion to THC emissions before conversion.

(4) With respect to light duty vehicles, light duty trucks, or heavy-duty engines meeting the requirements of paragraph (2) above, the above demonstration may be applied as a reasonable basis for up to a maximum of three additional light duty engine families to that tested, provided:

A. The results from testing done in accordance with the above procedures demonstrate compliance with low emission vehicle (LEV) or more stringent emission standards under 40 CFR § 88.104,

B. The additional engine families have engine displacements equal to, or within 0.8 liters (50 CID) less than, the engine tested,

C. The additional engine families comprise vehicles equal to or less than the gross vehicle weight of the vehicles covered by the engine family tested, and

D. The additional engine families are equipped with the same catalytic converter type (i.e. beaded vs monolith, OC vs OC/RC) and the same primary emission control technology (eg. EGR, Air Injection, EFI vs carburetor, closed loop vs open loop) as the engine family tested.

(5) Option 3 of this policy is not available for conversion of California only engine families.

(6) An alternative fuel conversion system that degrades a closed loop feedback system to a continuous non-feedback open loop system is not allowed under this option.

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(7) Compliance with this policy may be demonstrated based on existing data provided such data are the result of testing in accordance with the procedures and protocols specified herein.

(8) Demonstration with the Cold CO requirements under 40 CFR Part 86 Subpart C is not required under Option 3 of this policy.

(9) The Certification Short Test requirements under 40 CFR Part 86, Subpart O is not required under Option 3 of this policy.

(10) The evaporative emissions requirements under 40 CFR 86.094-8(b) and 86.094-9(b) are not required under Option 3 of this policy.

c. The manufacturer of the conversion system shall specify all part numbers/calibrations associated with that conversion system and provide all such information, specifications and installation requirements, including a permanent conversion system label which appropriately identifies the conversion system with reasonable specificity, with each system that is sold or provided for installation.

d. In order to demonstrate that it has a reasonable basis to believe that its conversion system will not adversely affect emissions over the useful life of the vehicle or engine, the conversion system manufacturer should retain records including but not limited to all emission test data, including test results, description of vehicles and/or engines modified, all maintenance and modifications performed, laboratory data sheets, identification of test laboratory, test dates, test personnel and test procedures followed, engine families tested, data to support additional engine family coverage, if applicable, VIN's, vehicle and engine mileage and/or age as applicable, fuel specifications, conversion system part numbers and calibrations, durability procedures followed including all durability data and all calculations and engineering analyses performed to determine compliance with the above requirements.

e. In order to meet the requirements of this policy, any installation of a conversion system designed and tested in accordance with the above shall be done in accordance with the applicable part numbers/calibrations installed on the vehicle or engine that was tested, completed in accordance with manufacturer's specifications and/or instructions and the conversion system label affixed to the vehicle or engine. The system shall only be installed on a vehicle or engine of the same engine family as that tested or as permitted under paragraph 3.b.(4) above.

f. In support of an appropriate installation, the installer should retain records of each vehicle or engine converted in accordance with the above, including the VIN, make and year of each vehicle or engine so modified, the name of the installer, the date of installation and a copy of the manufacturer's or marketer's/distributor's representation that the conversion system has been demonstrated on that engine family to meet the requirements of this policy

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g. In support of any marketer's or distributor's compliance with the requirements of this policy, such parties should retain records of each conversion system sold or distributed, copies of the representation from the manufacturer that the system meets this policy and records of sales to others including the name of the purchasers, part numbers, dates of sales and the numbers of systems sold.

h. Colorado has indicated that it will revise its administrative procedures under Colorado Regulation No. 14 to require that conversion system manufacturers conduct testing in accordance with option 3 of this Addendum in order to receive a Colorado Letter of Certification. Consequently, until December 31, 1998, EPA will not consider as tampering the sale and installation of a conversion system in Colorado pursuant to a Colorado Letter of Certification issued after the above-referenced administrative procedure revisions have been made by Colorado, provided testing in support of the Letter of Certification is done in accordance with option 3 of this Addendum and is completed by March 31, 1998.

D. Conclusion: EPA believes that the maximum degree of assurance that vehicles or engines modified to operate on alternative fuels will meet emissions standards throughout their useful life can only be achieved through full certification demonstration in accordance with 40 CFR Parts 86 or 88. However, the cost and time associated with such a demonstration may be prohibitive for some conversion system manufacturers in the short term and may not provide sufficient equipment for fleets currently subject to various alternative fuel mandates to comply with those mandates. In addition, EPA will be attempting to implement various procedures to streamline federal certification for alternative fuel vehicles and on-highway engines, but it is likely that implementation of those procedures will take some time. In the interim, the procedures and requirements outlined in option 3 above should allow alternative fuel conversion systems to be developed and evaluated more quickly and at less cost, while providing a reasonable assurance that emissions will not be deteriorated. After December 31, 1998, manufacturers, marketers and installers must utilize equipment which meets the requirements of option 1 or option 2 above to be covered by the non-tampering policy of Memo 1A.

EPA will be reviewing Memo 1A more thoroughly in the near future to determine if additional changes are required for other vehicle or engine modifications, parts or systems. Any questions regarding this interim policy should be directed to the Mobile Source Enforcement Branch at (202) 564-2255.

/s/

Bruce C. Buckheit, Director
Air Enforcement Division
Office of Enforcement and Compliance Assurance

BEAR RIVER HEALTH DEPARTMENT

REGULATION NO. 2013-1

**A REGULATION OF THE BEAR RIVER HEALTH DEPARTMENT FOR A VEHICLE
EMISSIONS INSPECTION AND MAINTENANCE PROGRAM**

Adopted by the Bear River Board of Health

May 9, 2013

Updated May 27, 2015

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1.0 DEFINITIONS

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For the purpose of this Regulation, the following terms, phrases, and words shall have the following meanings, unless otherwise defined:

~~Air Intake Systems: Systems that allow for the induction of ambient air, including preheated air into the engine combustion chamber for the purpose of mixing with a fuel for combustion;~~

Commented [JG1]: This term is not addressed in the regulation and doesn't need to be defined.

~~AIR System: (Air Injection Reaction) A system for providing supplementary air into a vehicle's exhaust system to promote further oxidation of HC and CO gases and to assist catalytic reaction;~~

Commented [JG2]: This term is not addressed in the regulation and doesn't need to be defined.

Alternative Fuel: A fuel that is derived from resources other than petroleum. This includes but is not limited to: natural gas, propane, ethanol, and bio-diesel;

~~Analyzer: See Exhaust Emissions Gas Analyzer;~~

Bi-fuel Vehicle: A vehicle that has two separate fueling systems that enables the vehicle to run on one or the other (ex. Gasoline and natural gas). These vehicles may be switchable or non-switchable;

Board: See Board of Health;

Board of Health: The Bear River Board of Health;

Cache County Council: The elected Cache County Council representatives;

~~Calibration: The process of establishing or verifying the accuracy of an Exhaust Emissions Gas Analyzer to perform a consistent evaluation of engine exhaust by using different calibration gases having precisely known concentrations;~~

Commented [JG3]: This term is no longer necessary with the removal of TSI requirements.

~~Calibration Gases: Gases of accurately known concentration that are used as references for establishing or verifying the calibration curve and accuracy of an Exhaust Emissions Gas Analyzer and are approved by the Department for use;~~

Commented [JG4]: This term is no longer necessary with the removal of TSI requirements.

~~Catalytic Converter: A post-combustion device that oxidizes HC and CO gases and/or reduces oxides of nitrogen gases;~~

Commented [JG5]: This term is not addressed in the regulation and doesn't need to be defined.

~~Certificate of Compliance: A document used in the I/M Program to certify that a vehicle meets all applicable requirements of the program; Proof that a vehicle meets all applicable requirements of the I/M Program. This proof may be sent in an electronic format to the Utah State Tax Commission;~~

Commented [JG6]: We are working with DMV to utilize electronic certificates instead of paper certificates. This definition better reflects that.

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Certificate of Waiver: A document used to verify that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met;

Commented [JG7]: This term has been changed to "Waiver".

Certification: Assurance by an authorized source, whether it be a laboratory, the manufacturer, the State, or the Department, that a specific product or statement is in fact true and meets all required requirements;

Certified Emissions Inspector: A person who has successfully completed all certification requirements and has been issued a current, valid Certified Emissions Inspector Certification by the Department;

Certified Testing Equipment: An official test instrument that has been approved by the Department to test motor vehicles for compliance with this Regulation; this includes the Analyzer as well as the OBD testing portion of the machine;

CO: Carbon monoxide;

Commented [JG8]: This term is no longer necessary with the removal of TSI requirements.

Compliance: Verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meets all required accreditation requirements;

Compliance Assurance Inspection: An enhanced emissions inspection performed at the I/M Technical Center;

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Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list shall be inspected at the I/M Technical Center.

Contractor: The emission inspection system contractor selected by the Department to provide specialized services related to the I/M Program in Cache County;

Council: See Cache County Council;

County: Cache County, Utah;

Custom Vehicle: A motor vehicle that meets the requirements of Section 41-6a-1507, Utah Code Annotated, 1953 as amended;

Commented [JG9]: This term is defined in Utah Code.

Cutpoints: The maximum allowable concentration of carbon monoxide (CO) and hydrocarbons (HC) for a given weight class and model year of a motor vehicle, as provided by this Regulation, using an approved infrared Exhaust Emissions Gas Analyzer;

Commented [JG10]: This term is no longer necessary with the removal of TSI requirements.

Department: The Bear River Health Department;

Director: The Director of the Bear River Health Department or his authorized representative;

DLC: Data Link Connector used in OBD applications is a 16 pin connector used by scan tools and other emission diagnostic equipment to communicate with the vehicle's computer for the purpose of collecting emissions related data;

DTC: Diagnostic Trouble Code is a standardized 5 digit code that is used to identify a specific fault that has occurred or is occurring in a vehicle;

Dual Fuel Vehicle: See Flexible Fuel Vehicle;

~~EGR System: The Exhaust Gas Recirculation System—An emissions control system that recycles or recirculates a portion of the exhaust gases back to the engine combustion chambers;~~

Commented [JG11]: This term is not addressed in the regulation and doesn't need to be defined.

Emissions Control Systems: Parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the sole or primary purpose of reducing emissions;

EPA: The United States Environmental Protection Agency;

~~Exhaust Emissions Gas Analyzer: An instrument that is capable of measuring the concentrations of certain air contaminants in the exhaust gas emanating from a motor vehicle which is approved by the Department for this use in accordance with this Regulation as an official test instrument;~~

Commented [JG12]: This term is no longer necessary with the removal of TSI requirements.

~~Evaporative Control System: An emissions control system that prevents the escape of fuel vapors from the fuel tank or air cleaner and stores them in a charcoal canister to be burned in the combustion chamber;~~

Commented [JG13]: This term is not addressed in the regulation and doesn't need to be defined.

Flexible Fuel Vehicle: Also called Flex-Fuel Vehicle. A vehicle that is designed to run on more than one fuel, usually gasoline blended with ethanol (0-85%), and both fuels are stored in the same common tank;

~~Gas Calibration Check: A procedure using known concentrations of HC and CO calibration gases to verify the accuracy of an Analyzer in measuring HC and CO;~~

Commented [JG14]: This term is no longer necessary with the removal of TSI requirements.

~~HC: Hydrocarbons;~~

Commented [JG15]: This term is no longer necessary with the removal of TSI requirements.

~~Idle: A condition where the vehicle engine is warm and running at the rate specified by the manufacturer's curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position. This~~

~~condition must be achieved without placing a load on the vehicle to decrease the RPM to the specified rate;~~

Commented [JG16]: This term is no longer necessary with the removal of TSI requirements.

I/M Program: See Vehicle Emissions Inspection and Maintenance Program;

I/M Program Station: A stationary Vehicle Emissions Inspection and Maintenance Station that qualifies and has a valid permit, issued by the Department, to operate as an emissions inspection and maintenance station in the I/M Program;

I/M Technical Center: A facility operated by the Department for technical or administrative support of the I/M Program;

Inspection: An official vehicle emissions test performed for the purpose of issuing a Certificate of Compliance or ~~Certificate of Waiver;~~

Inspector: A Certified Emissions Inspector;

MIL: Malfunction Indicator Light is an indicator located on the instrument panel that notifies the operator of an emissions fault;

Motor Vehicle: A self-propelled motorized vehicle with an internal combustion powered engine which is licensed for operation on public roads and/or streets. Motor Vehicles exempted from the inspection requirements of this Regulation are listed in Section 6.4 of this Regulation;

Non-certified Inspector: Any person who has not been certified by the Department to perform official emissions tests;

OBD: On Board Diagnostic refers to a vehicle's monitoring and diagnostic capabilities of its emissions systems;

~~PCV System: Positive Crankcase Ventilation System—an emissions control system which returns crankcase vapors and blowby gases to the combustion chamber to be burned;~~

Commented [JG17]: This term is not addressed in the regulation and doesn't need to be defined.

~~Primary Residence: Is the place where an individual intends to permanently reside, maintains a permanent residence more than six (6) months during a calendar year, or where an individual lives more than six (6) months during a calendar year;~~

Commented [JG18]: This term is being removed from the regulation. See Section 6.0 for more details.

Publicly-owned Vehicles: A motor vehicle owned by a government entity, including but not limited to the federal government or any agency thereof, the State of Utah or any agency or political subdivision thereof;

Readiness: Readiness is used to identify the state of a vehicle's emissions monitors as they are tested. Readiness does not indicate whether the monitors passed or failed the test, it only indicates whether or not the test has been run for any particular monitor;

Referee Inspection: An emissions inspection performed at the I/M Technical Center for the purpose of resolving disputes or overriding inspection criteria for cause;

Rejection: A condition where a vehicle subject to an OBD inspection has not met the Readiness requirements as set forth by this Regulation. The vehicle has not failed the inspection but it must be driven additional miles until Readiness monitors are set "ready" or repairs have been made allowing readiness flags to set ready;

Station: An I/M Program Station;

Technical Bulletin: A document, issued to Certified Emissions Inspectors and/or I/M Program Stations by the Department to update, clarify or establish policies and/or procedures for their implementation in the I/M Program;

Training Program: A formal program administered, conducted, or approved by the Department for the education of emission inspectors in basic emission control technology, inspection procedures, diagnosis and repair of emissions related problems, I/M Program policies, procedures, and this Regulation;

Two-Speed Idle: A condition where the vehicle engine is warm and running at a high speed rate of 2200-2800 RPMs and then a low rate of 350-1200 RPMs;

Commented [JG19]: This term is no longer necessary with the removal of TSI requirements.

Vehicle Emission Control Information Label (VECI Label): An EPA required label found on a vehicle that contains the manufacturer's name and trademark, and an unconditional statement of compliance with EPA emission regulations. The label often contains a list of emissions control devices found on the vehicle;

Vehicle Emissions Inspection and Maintenance Program: The program established by the Department pursuant to Section 41-6a-1642 Utah Code Annotated, 1953, as amended, and Cache County Ordinance 2013-04;

Vintage Vehicle: A motor vehicle that meets the requirements of Section 41-21-1 Utah Code Annotated, 1953 as amended;

Commented [JG20]: This term is defined in Utah Code.

Waiver: Proof that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met;

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2.0 PURPOSE

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It is the purpose of this Regulation to reduce air pollution levels in Cache County by requiring inspections of in-use motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 2.1 Protect and promote the public health, safety, and welfare;
- 2.2 Improve air quality;
- 2.3 ~~Meet or exceed the minimum design and performance requirements for.~~ Comply with the federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S.
- 2.4 Comply with the law enacted by the Legislature of the State of Utah, Sections 41-6a-1642 Utah Code Annotated, 1953, as amended.
- 2.5 Comply with Cache County Code Chapter 10.20, Vehicle Emissions and Maintenance Program, as amended Ordinance 2013-04.

3.0 AUTHORITY AND JURISDICTION OF THE DEPARTMENT

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3.1 Under ~~Chapter 10.20.020(C) of Cache County Code Section 2.3 of Cache County Ordinance 2013-04,~~ the Cache County Council (hereafter, Council) delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River Board of Health (hereafter Board), to address all issues pertaining to the adoption and administration of the Vehicle Emissions Inspection and Maintenance Program (hereafter I/M Program).

3.2 Under ~~Chapter 10.20.020(D) of Cache County Code Section 2.4 of Cache County Ordinance 2013-04,~~ the Council directs the Board to adopt and promulgate rules regulations to ensure compliance with State Implementation Plan requirements with respect to an I/M Program.

3.3 The Board is authorized to make standards and regulations pursuant to Section 26A-1-121(1) of the Utah Code Annotated, 1953, as amended.

3.4 The Board is authorized to establish and collect fees pursuant to Section 26A-1-114(1)(h)(i) of the Utah Code Annotated, 1953, as amended.

3.5 All aspects of the I/M Program within Cache County enumerated in Section 2.0 of this Regulation shall be subject to the direction and control of the Bear River Health Department (hereafter Department).

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4.0 POWERS AND DUTIES

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4.1 The Department shall be responsible for the enforcement and administration of this Regulation and any other powers vested in it by law and shall:

4.1.1 Make policies and procedures necessary to ensure that the provisions of this Regulation are met and that the purposes of this Regulation are accomplished;

4.1.2 Require the submission of information, reports, plans, and specifications from I/M Program Stations as necessary to implement the provisions, requirements, and standards of this Regulation;

4.1.3 Issue permits, certifications, and charge fees as necessary to implement the provisions, requirements, and standards of this Regulation; and

4.1.4 Perform audits of any I/M Program Station, issue orders and/or notices, hold hearings, and levy administrative penalties, as necessary to effect the purposes of this Regulation.

4.2 The Department may suspend, revoke, or deny a permit, subject to the Penalty Schedule in Appendix C, of an I/M Program Station and/or require the surrender of the permit of such I/M Program Station upon showing that:

4.2.1 A vehicle was inspected and issued a Certificate of Compliance by the station personnel that did not, at the time of inspection, comply with all applicable policies, procedures, ~~Technical Bulletins~~, and this Regulation;

Commented [JG21]: BRHD does not issue Technical Bulletins.

4.2.2 A vehicle was inspected and ~~rejected~~ failed by the I/M Program Station when, in fact, the vehicle was determined by the Department to be in such condition that it did comply with the requirements of this Regulation;

~~4.2.3 The I/M Program Station is not open and available to perform inspections during a major portion of the normal business hours of 8:00 AM to 5:00 PM Mondays through Fridays (except I/M Program Stations which only test their own vehicles);~~

Commented [JG22]: This statement limits stations that operate outside of normal business hours. Our testing technology allows us to collect required information 24 hours a day and a set schedule for operating hours does not affect the validity of an emissions inspection.

4.2.43 The I/M Program Station has violated any provisions of this Regulation, or any Rule, Regulation, or Department policy properly promulgated for the operation of an I/M Program Station;

4.2.54 The I/M Program Station was not equipped as required by Section 7.0 of this Regulation;

4.2.65 The I/M Program Station is not operating from a location specified on the permit;

4.2.76 An official inspection was done by a non-certified inspector or a non-certified inspector has gained access to the official testing portion of the Certified Testing Equipment test equipment or a non-certified inspector signed a Certificate of Compliance;

Commented [JG23]: We are working with DMV to produce electronic certificates that won't need to be signed by the inspector.

4.2.87 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment test equipment did not perform the inspection;

4.2.98 The Certified Testing Equipment computerized test equipment has been tampered with or altered in any way contrary to the certification and maintenance requirements of the Certified Testing Equipment test equipment;

4.2.409 The I/M Program Station denies access to a representative of the Department to conduct an audit or other necessary business during regular business hours;

4.2.11 The I/M fee signage procedures are not followed as specified in Section 6.6; or

Commented [JG24]: We don't need to penalize a station because they don't have a fee sign posted. The fee is capped at \$15/\$20 for an inspection.

4.2.120 The I/M fee has been determined by the Department to be discriminatory in that different fees are assessed dependent upon vehicle ownership, vehicle make or model, owner residence, etc.

4.2.131 The I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.3 The Department may suspend, revoke, or deny the certificate of a Certified Emissions Inspector, subject to the Penalty Schedule in Appendix C, and require the surrender of this certificate upon showing that:

4.3.1 The Certified Emissions Inspector caused a Certificate of Compliance to be issued without an approved inspection being made;

4.3.2 The Certified Emissions Inspector denied the issuance of a Certificate of Compliance to a vehicle that, at the time of inspection, complied with the law for issuance of said certificate;

4.3.3 The Certified Emissions Inspector issued a Certificate of Compliance to a vehicle that, at the time of issuance, was in such a condition that it did not comply with this Regulation;

4.3.4 Inspections were performed by the Certified Emissions Inspector, but not in accordance with applicable policies, procedures, ~~Technical Bulletins~~, and this Regulation;

4.3.5 The Certified Emissions Inspector allowed a non-certified inspector to perform an official I/M test or gain access to the official testing portion of the Certified Testing Equipment ~~test equipment~~;

4.3.6 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment ~~test equipment~~ did not perform the inspection;

~~4.3.7 The Certified Emissions Inspector signed an inspection form or certificate stating that he had performed the emissions test when, in fact, he did not; or~~

Commented [JG25]: We are working with DMV to produce electronic certificates that won't be signed by the inspector.

4.3.8 The Certified Emissions Inspector employed at an I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.4 The Department shall respond, according to the policies and procedures of the Department, to public complaints regarding the fairness and integrity of the inspections they receive and shall provide a method that inspection results may be challenged if there is a reason to believe them to be inaccurate.

5.0 SCOPE

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It shall be unlawful for any person to fail to comply with any policy, procedure, ~~Technical Bulletin~~, or regulation promulgated by the Department, unless expressly waived by this Regulation.

6.0 GENERAL PROVISIONS

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Subject to the exceptions in Section 6.4 and pursuant to the schedule in Section 6.1, ~~individuals with their primary residence in Cache County must register their motor vehicles in Cache County and motor vehicles (of model years 1969 and newer) that are or will be registered in Cache County, or principally operated from a facility within Cache County shall be subject to an emission inspection performed by an I/M Program Station or other entity approved by the Director.~~ Owners of vehicles that meet the requirements of Section 6.2 or 6.3 shall comply with the inspection requirements regardless of the county of registration.

Commented [JG26]: It is not within our jurisdiction to enforce registration requirements. This is a DMV function. We simply enforce the requirement of vehicles registered in Cache County to comply with the emissions regulation. This language matches language found in 41-6a-1642(1).

Commented [JG27]: Redundant language.

6.1 ~~Beginning January 1, 2014, all~~ Motor vehicles are subject to a biennial emissions inspection. Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

6.1.1 A Certificate of Compliance, ~~Certificate of Waiver~~, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in odd-numbered years for a vehicle with an odd-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.2 A Certificate of Compliance, ~~Certificate of Waiver~~, or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in even-numbered years for a vehicle with an even-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.3 The Air Pollution Control Fee shall be paid annually, as per Chapter 10.20.040(F) of Cache County Code ~~Section 4.5 of Cache County Ordinance 2013-04~~, (see also Section 6.7 of this Regulation) as conditions precedent to registration or renewal of registration of a motor vehicle.

6.1.4 A Certificate of Compliance shall be valid for a period of time in accordance with Section 41-6a-1642(10) ~~41-1a-205~~ Utah Code Annotated, 1953, as amended.

6.2 Publicly-Owned Vehicles. Owners of publicly-owned vehicles shall comply with the inspection program requirements. Federally-owned vehicles and vehicles of employees operated on a federal installation that do not require registration in the State of Utah shall comply with the emissions testing requirements.

6.3 Vehicles of employees and/or students parked at a college or university that do not require registration in Cache County shall comply with the emissions testing requirements as authorized by 41-6a-1642(5)(a) Utah Code Annotated, 1953, as amended.

6.3.1 College or university parking areas that are metered or for which payment is required per use are not subject to the requirements in Section 6.3.

6.4 Vehicle Exemption. The following vehicles are exempt from these emissions testing requirements:

Commented [JG28]: This section has been cleaned up to reflect the removal of TSI inspections. I have also cleaned up some language and renumbered.

~~6.4.1 Any vehicle of model year 1968 or older;~~

~~6.4.2 All agricultural implements of husbandry and any motor vehicle that qualifies for an exemption as provided by 41-6a-1642(3) and 41-6a-1642(4) Utah Code Annotated, 1953, as amended;~~

~~6.4.1 An implement of husbandry as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.2 A motor vehicle that meets the definition of a farm truck as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended, and has a gross vehicle weight rating of 12,001 pounds or more;~~

~~6.4.3 A vintage vehicle as defined in Section 41-21-1 Utah Code Annotated, 1953, as amended;~~

~~6.4.4 A custom vehicle as defined in Section 41-6a-1507 Utah Code Annotated, 1953, as amended;~~

~~6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;~~

~~6.4.6 A motorcycle as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.7 A motor vehicle powered solely by electric power;~~

~~6.4.8 Any gasoline or non-diesel based Alternative Fuel powered vehicle of model year 1995 or older;~~

~~6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;~~

~~6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;~~

~~6.4.3 Any vehicle used for maintenance or construction and not designed or licensed to operate on the highway;~~

~~6.4.4 Any motorcycle or motor-driven cycle (including vehicles which operate with an engine normally used in a motorcycle);~~

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~~6.4.5 Any vehicle that operates exclusively on electricity;~~

~~6.4.6 Any motor vehicle which qualifies for legislative exemptions;~~

~~6.4.7 Tactical military vehicles;~~

~~6.4.8 Any vintage vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;~~

~~6.4.9 Any custom vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;~~

6.4.101 Any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacturer;

6.4.142 Any diesel or diesel based Alternative Fuel powered vehicle 1997 and older; and

6.4.123 Any diesel or diesel based Alternative Fuel powered vehicle with a GVWR gross vehicle weight rating greater than 14,000 lbs. pounds; and

6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended, or the Federal Clean Air Act.

6.5 It shall be the responsibility of the Certified Emissions Inspector if a vehicle exempted from this Regulation by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official emission test to inform the owner/operator of the vehicle that the vehicle is not required to have an official emission inspection for vehicle registration purposes.

6.6 Official Signs.

6.6.1 All I/M Program Stations, ~~except those stations authorized to inspect only their own motor vehicles as a fleet inspection station,~~ shall display in a conspicuous location on the premises an official sign provided and approved by the Department;

Commented [JG29]: All I/M stations should post their official sign.

~~6.6.2 The emission endpoints, as referenced in Appendix B shall be posted in a conspicuous place on the station's premises;~~

Commented [JG30]: This sign is no longer necessary due to TSI removal.

6.6.32 The readiness requirements for an OBD test as referenced in Appendix D shall be posted in a conspicuous place on the station's premises;

6.6.43 The station shall post on a clear and legible sign and in a conspicuous place at the station, the fees charged by that station for the performance of the emissions inspection;

6.6.54 The free re-inspection policy as referenced in Section 9.6 shall be posted in a conspicuous place on the station's premises;

6.6.65 The signs required by Sections 6.6.1 through 6.6.54 shall be located so as to be easily in the public view.

6.7 Fees.

6.7.1 The fees assessed upon I/M Program Stations and Certified Emissions Inspectors shall be determined according to a fee schedule adopted by the Board. The fee schedule is referenced in Appendix A to this Regulation and may be amended by the Board as necessary.

6.7.2 An Air Pollution Control Fee is hereby assessed upon every motor vehicle registered in Cache County as per Chapter 10.20.040 of Cache County Code ~~Section 4.5 of Cache County Ordinance 2013-04~~. The fee will be assessed annually at the time of registration of the vehicle.

6.7.2.1 This fee assessment is included upon all motorized vehicles including those that are exempted from the inspection requirements of this Regulation by Section 6.4 ~~unless a separate fee is assessed on other motor vehicles by other Board of Health Regulations.~~

Commented [JG31]: This language is not necessary.

6.7.2.2 A motor vehicle that is exempt from the registration fee, and a commercial vehicle with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953, as amended and Chapter 10.20.040 of Cache County Code ~~Section 4.5.2 of Cache County Ordinance 2013-04~~.

6.7.3 I/M Program Stations may charge a fee for the required service. The fee may not exceed, for each vehicle inspected, the amount set by the Board and referenced in Appendix A of this Regulation.

6.7.3.1 The inspection fee pays for a complete inspection leading to a Certificate of Compliance, a Rejection, or a failure. If a vehicle fails, or is rejected from an inspection, the owner/operator is entitled to one free re-inspection if he returns to the I/M Program Station that performed the original inspection within fifteen (15) calendar days from the date of the initial inspection. The I/M Program Station

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shall extend the fifteen day free re-inspection to accommodate the vehicle owner/operator if the I/M Program Station is unable to schedule the retest of the vehicle within the fifteen day time period. The inspection fee shall be the same whether the vehicle passes or fails the emission test.

~~6.7.3.2 At the request of the Department, an I/M Program Station shall extend the free retest time for vehicle owners/operators who are unable to complete repairs because of the unavailability of parts to make the necessary repairs.~~

Commented [JG32]: This language is not necessary and doesn't change the way the program operates. In the 7 years we have been running an I/M program we have never requested that a station extend the free re-test period.

6.7.4 If a vehicle fails the inspection and is within the time and mileage requirements of the federal emissions warranty contained in section 207 of the Federal Clean Air Act, the Certified Emissions Inspector shall inform the owner/operator that he may qualify for warranty coverage of emission related repairs as provided by the vehicle manufacturer and mandated by the Federal Environmental Protection Agency (see 40 CFR Part 85, Subpart V).

6.8 Compliance Assurance List

6.8.1 The Department shall create and maintain a list of vehicles that are subject to a Compliance Assurance Inspection at the I/M Technical Center.

Commented [JG33]: The Department needs to ability to recall vehicles that are suspected of fraud or tampering. This is a great opportunity to enhance our OBD inspection and further verify that vehicles are meeting emissions requirements. This is a great strength to the program and it goes hand in hand with our ability to request vehicle registration revocations from DMV.

6.8.1.1 The Compliance Assurance Inspection criteria listed in Appendix D, Test Procedures, shall be followed.

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6.8.1.2 A vehicle that passes the Compliance Assurance Inspection may be removed from the Compliance Assurance List by Department personnel.

6.8.1.3 A vehicle that fails the Compliance Assurance Inspection may be subject to penalties as described in Section 14 of this regulation.

6.8.2 The Department reserves the right to recall a vehicle and perform a Compliance Assurance Inspection at the I/M Technical Center for the following reasons:

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6.8.2.1 Suspected fraudulent registration;

6.8.2.2 Suspected fraudulent emissions inspection;

6.8.2.3 Suspected tampering of emissions control devices;

6.8.2.4 Violations of Section 41-6a-1626, Utah Code Annotated, 1953, as amended, regarding visible emissions; and

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6.8.2.5 Any item listed in Appendix D, Test Procedures, that cause the vehicle to be flagged during an emissions inspection.

7.0 PERMIT REQUIREMENTS OF THE VEHICLE EMISSIONS I/M PROGRAM STATION

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7.1 Permit Required.

7.1.1 No person shall in any way represent any place as an official I/M Program Station unless the station is operated under a valid permit issued by the Department.

7.1.2 The Department is authorized to issue or deny permits for I/M Program Stations.

7.1.3 No permit for any official I/M Program Station may be assigned, transferred, or used by any person other than the original owner identified on the permit application for that specific I/M Program Station.

7.1.4 The permit shall be posted in a conspicuous place within public view on the premises.

7.1.5 Application for an I/M Program Station permit shall be made to the Department upon a form provided by the Department. No permit shall be issued unless the Department finds that the facilities, tools, and equipment of the applicant comply with the requirements of this Regulation and that competent personnel, certified under the provisions of Section 8.0, are employed and will be available to make inspections, and the operation thereof will be properly conducted in accordance with this Regulation.

7.1.5.1 An I/M Program Station shall notify the Department and cease any emission testing if the station does not have a Certified Emissions Inspector employed;

7.1.5.2 An I/M Program Station shall notify the Department upon termination and/or resignation of any Certified Emissions Inspector employed by the station;

7.1.5.3 An I/M Program Station shall comply with all the terms stated in the permit application and all the requirements of this Regulation;

~~7.1.5.4 As a condition for permitting test and repair I/M Program Stations, the station will keep and maintain all necessary~~

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tools and resources needed to effectively repair vehicles that fail an emissions test;

7.1.5.5 As a condition for permitting test only I/M Program Stations, the station will notify the vehicle owner/operator that the facility is a test only facility and will not provide repairs, prior to any official emissions test;

7.1.5.6 An I/M Program Station shall have a building with a suitable exhaust extraction system; and

7.1.5.7 An I/M Program Station shall provide a dedicated internet connection for the Certified Testing Equipment. A wireless internet connection may be required by the Contractor.

Commented [JG34]: We don't have a reason to permit "Test and Repair" and "Test Only" stations. We are permitting "I/M Program Stations." They all function the same according to our regulation. Even with the current wording the stations were treated the same and had no different requirements.

Commented [JG35]: This was important for TSI inspections but it isn't necessary for us to dictate this for OBD inspections. Stations should take these steps as a good business practice, not a requirement to perform an OBD inspection.

7.2 Permit Duration and Renewal

7.2.1 The permit for I/M Program Stations shall be issued annually and shall expire on the last day of the month, one year from the month of issue. The permit shall be renewable sixty days prior to the date of expiration.

7.2.2 It is the responsibility of the owner/operator of the I/M Program Station to pursue the permit renewal through appropriate channels.

7.3 I/M Program Station to hold Department Harmless

7.3.1 In making application for a permit or for its renewal, such action shall constitute a declaration by the applicant that the Department shall be held harmless from liability incurred due to action or inaction of I/M Program Station's owners or their employees.

7.4 An I/M Program Station shall be kept in good repair and in a safe condition for inspection purposes free of obstructions and hazards.

8.0 TRAINING AND CERTIFICATION OF INSPECTORS

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8.1 Certified Emissions Inspector Certification Required.

8.1.1 Except as authorized by the Department, No person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.

8.1.2 Applications for a Certified Emissions Inspector Certification shall be made upon an application form prescribed by the Department. No certification shall be issued unless:

- 8.1.2.1 The applicant has shown adequate competence by successfully completing the ~~written and practical~~ all portions of the Certified Emissions Inspector Certification requirements as specified in this Regulation; and
- 8.1.2.2 The applicant has paid the required permit fees as set by the Board and referenced in Appendix A of this Regulation.

8.1.3 An applicant shall comply with all of the terms stated in the application and with all the requirements of this Regulation.

8.1.4 An applicant shall complete a Department approved training course and shall demonstrate knowledge and skill in the performance of emission testing and use of the Certified Testing Equipment ~~test equipment~~. Such knowledge and skill shall be shown by passing at minimum:

- 8.1.4.1 Operation and purposes of emission control systems;
- 8.1.4.2 Inspection procedures as outlined in this Regulation and prompted by the Certified Testing Equipment ~~test equipment~~;
- 8.1.4.3 Operation of the Certified Testing Equipment ~~including the performance of gas calibration and leak check;~~
- 8.1.4.4 The provisions of Section 207(b) warranty provisions of the Federal Clean Air Act, and other federal warranties;
- 8.1.4.5 The provisions of this Regulation and other applicable Department policies and procedures; and
- 8.1.4.6 A performance qualification test including but not limited to the following:
 - (a) Demonstration of skill in proper use, care, and maintenance, ~~calibration, and leak testing~~ of the Certified Testing Equipment;
 - (b) Demonstration of ability to conduct the inspection; and
 - (c) Demonstration of ability to accurately enter data in the Certified Testing Equipment ~~test equipment~~.

Commented [JG36]: This language is not necessary with the removal of TSI inspections.

Commented [JG37]: This language is not necessary with the removal of TSI inspections.

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~~8.1.5 A signed hands-on performance check sheet shall be necessary for successful completion of the performance qualification test. The hands-on performance check sheet shall be signed by an instructor or other equally qualified person approved by the Department.~~

Commented [JG38]: This language was originally put in place to allow for outside companies to provide inspector training. All training is done in-house at BRHD and we validate the training. We do not need this check sheet.

8.1.65 The Department shall issue a Certified Emissions Inspector Certificate to an applicant upon successful completion of the requirements of this section.

8.1.76 The Certified Emissions Inspector Certificates are and remain the property of the Department, only their use and the license they represent is tendered.

8.1.87 Certified Emissions Inspector Certifications shall not be transferred from one person to another person.

8.2 Recertification Requirements for Certified Emissions Inspectors

8.2.1 The Department may renew certifications for an existing Certified Emissions Inspector after a properly completed renewal form is submitted, reviewed, and approved, the recertification requirements have been completed, the fees are paid and the Certified Emissions Inspector has complied with this Regulation.

8.2.2 Certified Emissions Inspectors shall be required to recertify annually. Failure to recertify shall result in suspension or revocation of the Certification as described in this Regulation.

8.2.3 Certified Emissions Inspectors shall complete a Department approved refresher course every 2 years. Applicants for recertification shall complete a Department approved refresher course no more than sixty days prior to the date of expiration. ~~Applicants shall demonstrate knowledge and skill in the performance of emission testing and use of the test equipment.~~

Commented [JG39]: This is refresher training. The inspectors are capable of using the equipment at this point.

8.3 Certification Expiration

8.3.1 The Certified Emissions Inspector Certification shall be issued annually and shall expire on the last day of the month one year from the month of issue. The certification shall be renewable sixty days prior to the date of expiration.

8.3.2 It is the responsibility of the Certified Emissions Inspector to pursue the renewal of the Certification.

8.4 Certified Emissions Inspector Certification Denial, Suspension and Revocation

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8.4.1 Certified Emissions Inspector Certifications may be suspended or revoked by the Department for violations of this Regulation.

8.4.2 Suspension or revocation of Certified Emissions Inspector Certifications shall follow the provisions of Appendix C of this Regulation.

8.4.3 The Department may deny issuance of a Certified Emissions Inspector Certification to an individual that works as an emissions inspector in another county in Utah and is currently under suspension or revocation in that program.

9.0 INSPECTION PROCEDURE

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9.1 Except as authorized by the Department, The official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures are to be followed.

~~9.2 The Certified Emissions Inspector shall verify the vehicle license plate and vehicle identification numbers by comparing the information on the vehicle's registration with those on the vehicle and shall accurately record them on the inspection test equipment.~~

~~9.2.1 The Certified Emissions Inspector shall verify the owner's name and address and enter this information into the test equipment.~~

~~9.2.2 The Certified Emissions Inspector shall enter completely and accurately all the information required as part of the data entry procedure for the official vehicle emissions test on the approved test equipment.~~

Commented [JG40]: Test procedures are documented in Appendix D.

9.3~~2~~ A complete official test must be performed any time an inspection is requested. Do not perform any part of the inspection without initiating an official test on the Certified Testing Equipment test equipment.

9.4~~3~~ The Certified Emissions Inspector shall perform the official vehicle emissions test using the proper testing procedure:

9.4~~3~~.1 All gasoline, and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a GVWR- gross vehicle weight rating 8,500 lbs- pounds or less, shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

~~9.4.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1969 to 1995 shall be tested as specified in~~

~~Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

~~9.4.3 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 to 2007 with a GVWR greater than 8,500 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

9.4.43.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR gross vehicle weight rating greater than 8,500 lbs- pounds and less than 14,001 lbs pounds shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

~~9.4.5 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR greater than 14,000 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.~~

9.4.63.3 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer with a GVWR- gross vehicle weight rating less than 14,001 lbs- pounds shall be tested as specified in Appendix D, Diesel Test Procedures, unless specifically exempted by this Regulation.

9.54 Retesting Procedures

9.54.1 If the vehicle fails the initial emissions inspection, the owner/operator shall have fifteen calendar days in which to have repairs or adjustments made and return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. ~~In order to be in compliance, the vehicle that failed the initial test shall meet the following conditions:~~

9.5.1.1 The vehicle is re-tested; and

9.5.1.2 The vehicle meets the requirements as specified in Appendix D.

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Commented [JG41]: This language is redundant.

9.54.2 If the vehicle is Rejected from the initial emissions inspection for failure to complete Readiness requirements, the owner/operator shall have fifteen calendar days in which to return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. ~~In order to be in compliance, the vehicle that was Rejected from the initial test shall meet the following conditions:~~

9.5.2.1 The vehicle is re-tested; and

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~~9.5.2.2 The vehicle meets the requirements as specified in Appendix D.~~

Commented [JG42]: This language is redundant.

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9.4.3 If the vehicle owner/operator does not return to the I/M Program Station that performed the initial inspection within fifteen calendar days the I/M Program Station is under no obligation to offer a free re-inspection.

9.65 Certificate of Waivers

9.6.1 A Certificate of Waiver may be issued for 1969 to 1995 model year vehicles if all of the following requirements are met:

~~9.6.1.1 Air pollution control devices identified in the emission decal are in place and operable on the vehicle. If the decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. The gas tank cap shall be in place. If the devices have been removed or rendered inoperable, they shall be replaced or repaired before a Certificate of Waiver is granted;~~

~~9.6.1.2 The vehicle continues to exceed applicable cutpoint standards after \$200.00 of acceptable emissions related repairs have been performed. Proof of repair costs shall be provided for the vehicle to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made by someone with ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00.~~

9.6.25.1 A Certificate of Waiver may be granted and a Certificate of Compliance issued for 1996 and newer model year vehicles if all of the following requirements are met:

~~9.6.2.15.1.1 Air pollution control devices identified in the VECI Label emission decal are in place and apparently operable on the vehicle. If the VECI Label decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. If the devices have been removed or rendered inoperable, they shall be replaced or repaired before a Certificate of Waiver is granted;~~

~~9.6.2.25.1.2 The vehicle continues to exceed applicable cutpoint standards after \$200.00 of acceptable emissions related~~

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repairs have been performed, if the vehicle is subject to a Two-Speed Idle Inspection. If the vehicle is subject to an OBD Inspection, the vehicle continues to fail the inspection after \$200.00 has been spent on acceptable emissions related repair costs for that specific vehicle, and if proof of repair costs for that specific vehicle have been provided to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made by someone at a repair station that employs individuals with current ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00;

~~9.6.2.35.1.3~~ The vehicle is not within the time and mileage requirements of the federal emissions warranties. Any vehicle that is within time and mileage requirements of the federal emissions warranties shall not be eligible for an emissions repair. ~~a~~ Waiver, but shall be repaired to pass the testing requirements; and

~~9.6.2.45.1.4~~ A vehicle that is ~~r~~Rejected from the OBD Inspection may qualify for a ~~w~~Waiver if it meets requirements set forth in Appendix F, Waivers for "Not Ready" Vehicles.

~~9.6.35.2~~ As used in Sections 9.6.1, and 9.6.2 9.5.1, acceptable emissions related repairs:

~~9.6.3.1~~ Refers to those expenditures and costs associated with the adjustment, maintenance, and repair of the motor vehicle which are directly related to reduction of exhaust emissions necessary to comply with the applicable emissions standards, and procedures, and/or repairs to the evaporation vapor recovery system;

~~9.6.3.25.2.1~~ May include adjustments, maintenance, or repairs performed up to 60 days prior to the official emissions test, provided appropriate documentation is supplied to the Department;

Diagnostic work performed, including Diagnostic Trouble Codes if applicable, must be properly documented to justify any repairs performed;

~~9.6.3.35.2.3~~ Does not include the fee paid for the test;

Commented [JG43]: This section was necessary for TSI repair work. OBD repairs are more closely tied to DTCs. This is addressed further.

~~9.6.3.45.2.4~~ Does not include costs associated with the repairs or replacements of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, replacement, or repair is due to disconnection of, tampering with, or abuse of the emissions control systems;

~~9.6.3.5~~ Does not include repairs performed to the vehicle's exhaust system to correct problems with excessive exhaust dilution;

Commented [JG44]: We aren't doing TSI inspections anymore.

~~9.6.3.65.2.5~~ Refers to repairs, maintenance, and diagnostic evaluations done in accordance with manufacturer's specifications, to the extent that the purpose is to reduce emissions;

~~9.6.3.75.2.6~~ Repairs performed on OBD compliant vehicles should be directly related to the diagnostic trouble codes identified by the vehicle and by further diagnostic tests on the vehicle;

~~9.6.3.85.2.7~~ Does not include parts replaced on OBD compliant vehicles that cannot be justified through diagnostic trouble codes or further diagnostic tests on the vehicle.

~~9.6.4~~ Information regarding all performed repairs shall be entered into the appropriate data base of the test equipment prior to the vehicle being retested.

Commented [JG45]: Repair information has never been entered into the test equipment and it shouldn't be a requirement.

~~9.6.55.3~~ Certificates of ~~A~~ Waiver shall only be issued by the Department unless the Department determines other acceptable methods of ~~issuing the~~ ~~w~~Waivers. A ~~w~~Waiver shall only be issued after determining that the vehicle complies with the requirements of this Section ~~for waiver issuance~~.

~~9.6.6~~ Prior to referring the owner/operator to the Department for determining waiver eligibility, the I/M Program Station and the Certified Emissions Inspector shall verify that the repair and eligibility requirements of this Section have been met.

Commented [JG46]: Issuing waivers is a responsibility of the Department, not the I/M Program Station.

~~9.6.75.4~~ A Certificate of Waiver shall only be issued once to any vehicle that qualifies, throughout the lifetime of the vehicle.

~~9.6.85.5~~ A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a ~~w~~Waiver.

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10.0 ENGINE SWITCHING

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10.1 Engine switching shall be allowed only in accordance with EPA policy. If a vehicle that is subject to a visual inspection has an engine other than the original, the vehicle owner/operator must demonstrate to the Department that the engine meets or exceeds the requirements for the model year and class of vehicle in which it is installed. The new engine must be equally or more effective in controlling emissions as those systems originally manufactured on the vehicle;

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10.2 Vehicles not meeting the requirements of Section 10.0 shall be deemed as tampered and are not eligible for a ~~Certificate of Waiver~~, unless they are restored to the original engine and emission control configuration.

~~10.3 The Department shall adhere to the policies listed in Appendix G to ensure vehicles with switched engines are inspected appropriately.~~

Commented [JG47]: Appendix G has been removed. Refer to Section 10.1 for guidance.

11.0 SPECIFICATIONS FOR CERTIFIED TESTING EQUIPMENT AND CALIBRATION GASES

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11.1 Approval of Certified Testing Equipment

11.1.1 Certified Testing Equipment shall meet the specifications as detailed in Appendix E.

11.1.2 It shall be illegal for any person to modify the hardware or software of ~~approved emissions test equipment~~. Certified Testing Equipment without written application and formal approval by the Department and/or Contractor.

11.1.3 It shall be illegal for any person to gain access to any Department or ~~vendor~~. Contractor controlled portions of an ~~approved test equipment~~. Certified Testing Equipment without approval by the Department and/or vendor Contractor.

~~11.2 Calibration Gases~~

Commented [JG48]: This section is not necessary with the removal of TSI inspections.

~~11.2.1 General: The approved vendor shall, on request, supply at a reasonable cost to the I/M Program Station, calibration gases approved by the Department. The approved vendor shall have approved, full calibration gas containers installed and operational at the time of delivery. The Department shall establish necessary procedures for approving calibration gases.~~

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~~11.2.2 Calibration Gas Blends: The calibration gases supplied to any I/M Program Station shall conform to the specifications of the Department as specified in Appendix E. All calibration gases shall meet all Federal requirements for the emissions warranty coverage. Only gas blends supplied by Department approved blenders shall be used to calibrate official Analyzers.~~

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~~11.3 Warranty and Maintenance Requirements~~

Commented [JG49]: This should not be required by regulation. Warranties are discussed in the Technical Standards appendix.

~~11.3.1 It shall be the responsibility of the I/M Program Station to obtain warranty coverage for testing equipment supplied by the approved vendor. Coverage requirements will be determined by the Department.~~

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~~11.3.2 The testing equipment shall be maintained in accordance with the manufacturer's recommended maintenance schedule and records of this maintenance service shall be maintained for examination by the Department.~~

~~11.4 Gas Calibration and Leak Check~~

Commented [JG50]: This section is not necessary with the removal of TSI inspections.

~~Gas calibrations and leak checks shall be performed in accordance with the schedule referenced in Appendix E.~~

12.0 QUALITY ASSURANCE

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~~12.1 A quarterly inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. During the time of the inspection by the Department, the Department's representative shall have exclusive access to the Certified Testing Equipment. Inspections may be performed utilizing technology integrated into the Certified Testing Equipment.~~

~~12.1.1 During the time of the inspection and audit by the Department, the Department representative shall have exclusive access to the test equipment.~~

~~12.1.2 Required tools and equipment as noted in Section 7.1.5, shall be kept at the I/M Program Station at all times and shall be available for inspection by the Department at any time the inspection station is open for business.~~

~~12.2 An annual covert inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. Covert inspection frequency will be based on the needs of the Department.~~

~~12.3 The Department may increase the frequency of inspections and audits for I/M Program Stations and/or Certified Emissions Inspectors if the Department receives information of a violation of this Regulation.~~

~~12.4 The Department shall regularly monitor I/M Program Stations and/or Certified Emissions Inspectors through inspection records and/or technology integrated into the Certified Testing Equipment.~~

~~13.0 CUTPOINT STANDARDS FOR MOTOR VEHICLES EXHAUST GASES~~

~~In order to obtain a valid emissions Certificate of Compliance, exhaust emissions from a motor vehicle subject to a biennial Two-Speed Idle Test shall not exceed the maximum concentrations for carbon monoxide (CO) and hydrocarbons (HC) as specified in Appendix B.~~

143.0 DISCIPLINARY PENALTIES AND RIGHT TO APPEAL

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143.1 When the Department, or its representative(s), receives information of a violation of any regulation contained herein which may result in a permit denial, revocation, or suspension, the Department shall notify the affected entity, in writing, informing the entity of the violation and penalties to be enforced. The affected entity may request a hearing within ten calendar days of the Department giving notice of the potential permit denial, revocation, or suspension. Only a written request for a hearing shall be honored by the Department. No appeal may be made on a formal warning.

143.1.1 In considering the appropriate administrative action to be taken as indicated in Appendix C, the Director shall consider the following:

- 143.1.1.1 whether the violation was unintentional or careless;
- 143.1.1.2 the frequency of the violation or violations;
- 143.1.1.3 the ~~audit inspection~~ and covert ~~audit inspection~~ history of the I/M Program Station and the Certified Emissions Inspector;
- 143.1.1.4 whether the fault lies with the I/M Program Station or the Certified Emissions Inspector.

143.1.2 After consideration of the factors in Section 143.1.1 the Director may take appropriate administrative action as indicated in Appendix C against either the I/M Program Station, the Certified Emissions Inspector, or both.

143.2 Appeals Hearing Procedure:

143.2.1 An appeals hearing shall be held at the request of the affected entity in order to determine the accuracy of information obtained by the Department and whether there are mitigating factors which would justify a reduction of the imposed penalties.

143.2.2 The requesting party may bring to the hearing any witnesses and any evidence believed to be pertinent to the disciplinary action.

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143.2.3 The appeal shall be heard by the Vehicle Inspection and Maintenance Appeal Board, hereafter I/M Board, consisting of at least three persons, who are not employees of Bear River Health Department, appointed by the Board. The I/M Board shall have the discretion to determine which witnesses shall be heard and what evidence is relevant.

143.2.4 Violations determined to be intentional or flagrant shall result in the maximum enforcement of the penalty schedule pursuant to Appendix C.

143.2.5 In considering whether to reduce a penalty indicated by Appendix C, the I/M Board and the Department shall consider the following:

- 143.2.5.1 whether the violation was unintentional or careless;
- 143.2.5.2 the frequency of the violation or violations;
- 143.2.5.3 the ~~audit- inspection~~ and covert ~~audit- inspection~~ history of the I/M Program Station and the Certified Emissions Inspector;
- 143.2.5.4 whether the fault lies with the I/M Program Station, the Certified Emissions Inspector, or both.

143.3 Written notice of the final determination of the I/M Board, including the I/M Board's finding under Section 14.2.5, shall be made within ten calendar days after the conclusion of the appeals hearing.

154.0 PENALTY

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154.1 Any person who is found guilty of violating any of the provisions of this Regulation, either by failing to do those acts required herein or by doing a prohibited act, shall be guilty of a class B misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended. If a person is found guilty of a subsequent similar violation within two years, he shall be guilty of a class A misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

154.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.

154.3 The county attorney may initiate legal action, civil or criminal, requested by the Department to abate any condition that exists in violation of this Regulation.

154.4 In addition to other penalties imposed by a court of competent jurisdictions, any person(s) found guilty of violating any of this Regulation shall be liable for all expenses incurred by the Department.

154.5 A Penalty Schedule for permit warning, suspension, or revocation is adopted as Appendix C and may be amended by the Board as the Board deems necessary to accomplish the purposes of this Regulation.

14.6 The Department may request that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle's registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.

165.0 SEVERABILITY

If any provision, clause, sentence, or paragraph of this Regulation or the application thereof to any person or circumstances shall be held to be invalid, such invalidity shall not affect the other provisions or applications of this Regulation. The valid part of any clause, sentence, or paragraph of this Regulation shall be given independence from the invalid provisions or application and to this end the provisions of this Regulation are hereby declared to be severable.

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176.0 EFFECTIVE DATE

This Regulation shall become effective on ~~May 27, 2015~~ January 1, 2021 as adopted by the Bear River Board of Health.

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APPENDIXappendix A – FEE SCHEDULE

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Fee Schedule

Permitting of an official I/M Program Station	\$250.00
Annual Renewal of I/M Program Station	\$50.00
Expired I/M Program Station Renewal	\$75.00
I/M Program Station Re-location	\$75.00
Permitting of a Certified Emissions Inspector	\$25.00
Renewal of Certified Emissions Inspector	\$15.00
Expired Certified Emissions Inspector Renewal	\$25.00
Official Station Sign	Cost
APC Fee for 12 month registration	\$3.00
APC Fee for 6 month registration	\$2.25
Emissions Inspection Fee – OBD Test	\$15.00
Emissions Inspection Fee – TSI and Tampering	\$20.00
Inspector Training Fee	\$25.00

Commented [JG51]: These fees are set by Cache County ordinance. We don't need to reference them again considering BRHD doesn't collect them.

APPENDIX B

**BEAR RIVER HEALTH DEPARTMENT
EMISSION STANDARDS
CUTPOINTS**

MOTOR VEHICLE EMISSIONS INSPECTION/MAINTENANCE PROGRAM

The following schedule gives the maximum allowable concentrations for carbon monoxide (CO) and hydrocarbons (HC) for both cars and trucks as determined by an approved infrared gas analyzer using the prescribed procedures. The effective date for these cutpoints is January 1, 2014.

ALL PASSENGER VEHICLES

1969-1978 LIGHT DUTY TRUCKS 6,000 POUNDS GVWR OR LESS

1979 AND NEWER LIGHT DUTY TRUCKS 8,500 POUNDS GVWR OR LESS

MAXIMUM CONCENTRATION STANDARDS

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MODEL YEAR	PERCENT	PARTS/MILLION
	CARBON MONOXIDE	HYDROCARBONS
1969	6.0	800
1970-1974	5.0	700
1975-1976	4.0	600
1977-1979	3.0	500
1980	2.0	300
1981-1995	1.2	220
1996 and newer	N/A OBD-II	N/A OBD-II

HEAVY DUTY TRUCKS AND VANS
1969-1978 6,001 AND OVER GVWR
1979-2007 OVER 8,500 GVWR
2008 AND NEWER OVER 14,000 GVWR

MAXIMUM CONCENTRATION STANDARDS

1969	7.0	1500
1970-1978	5.0	1200
1979-1980	4.0	1000
1981-2007	3.5	800
2008 and newer	3.5	800

The minimum dilution factor must also be reached as part of the testing requirement. The dilution factor determination is contained in the analyzer specifications provided by the approved vendor.

NOTE: These should be considered as "cutpoints" for maximum allowable emissions levels. Vehicles must never be reset to these emission levels when readjustments are made, but rather shall be adjusted using manufacturer's specifications. By using manufacturer's specifications, the emissions levels should be well below the "cutpoints."

APPENDIX B - RESERVED

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APPENDIX C – PENALTY SCHEDULE

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Violation (resets after 2 years of no similar violations unless revoked)	1st Occurrence	2nd Occurrence	3rd Occurrence	4th Occurrence
Failure to inspect or substituting a vehicle other than the vehicle on the test record – Registering a failing vehicle <i>(intentional pass)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Passing a failing vehicle or recording pass for tampering on a tampered vehicle <i>(gross negligence)</i>	Tech: 30 day suspension and mandatory retraining	Tech: 60 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years	
	Station: 15 day suspension	Station: 30 day suspension	Station: 60 day suspension	Station: Revocation of permit for up to 5 years
Falsifying an inspection record or emissions certificate or Failing a passing vehicle <i>(intentional)</i>	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Non-certified person performing test – Using another inspector's access <i>(gross negligence table)</i>	Tech: 60 day suspension	Tech: 180 day suspension	Tech: Revocation of permit for up to 5 years	
	Station: 60 day suspension	Station: 180 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Inaccurate or incomplete data entry <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years
Failure to follow proper test procedures – Other regulation violations <i>(incompetence)</i>	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years

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APPENDIX D – TEST PROCEDURES

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OBDII Test Procedures for gasoline and non-diesel based Alternative Fuel powered vehicles

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1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:

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- 1.1 Vehicle Identification Number (VIN)
- 1.2 Gross Vehicle Weight Rating (GVWR)
- 1.3 Model year
- 1.4 Make
- 1.5 Model
- 1.6 Fuel Type
- 1.7 Engine size
- 1.8 Number of cylinders
- 1.9 Certification standard (EPA or California)

2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

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3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.

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3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the screen prompts until the test is complete.

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5 For 1996-2000 model year vehicles two (2) supported readiness monitors are allowed to be "not ready". For 2001 and newer vehicles one (1) supported readiness monitor is

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allowed to be "not ready". If the "not ready" status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.

5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to "ready" upon re-inspection.

6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

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7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:

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9.1 Mismatch between entered VIN and OBD VIN;

9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, and/or oxygen sensor;

9.3 A change in supported readiness monitors since the last inspection;

9.4 A change in communication protocol since the last inspection;

9.5 A change in OBD VIN since the last inspection;

9.6 The presence of an OBD VIN in a vehicle that does not support OBD VINs;

9.7 The absence of an OBD VIN in a vehicle that supports OBD VINs; or

9.8 A change in PID count since the last inspection.

10 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.

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11 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

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Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures**Formatted:** Font: Bold

All diesel powered vehicles 2007 and newer, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:

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- 1.1 Vehicle Identification Number (VIN)
- 1.2 Gross Vehicle Weight Rating (GVWR)
- 1.3 Model year
- 1.4 Make
- 1.5 Model
- 1.6 Fuel Type
- 1.7 Engine size
- 1.8 Number of cylinders
- 1.9 Certification standard (EPA or California)

2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

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3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.

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- 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
- 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the screen prompts until the test is complete.

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5 Two supported readiness monitors are allowed to be "not ready". If the "not ready" status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.

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5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to "ready" upon re-inspection.

6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

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7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:

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9.1 Mismatch between entered VIN and OBD VIN;

9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, ???

Commented [JG52]: Need to update this list

9.3 A change in supported readiness monitors since the last inspection;

9.4 A change in communication protocol since the last inspection;

9.5 A change in OBD VIN since the last inspection;

9.6 The absence of an OBD VIN; or

9.7 A change in PID count since the last inspection.

10 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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11 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.

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12 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

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All diesel powered vehicles 1998-2006, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:

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1.1 Vehicle Identification Number (VIN)

1.2 Gross Vehicle Weight Rating (GVWR)

1.3 Model year

1.4 Make

1.5 Model

1.6 Fuel Type

1.7 Engine size

1.8 Number of cylinders

1.9 Certification standard (EPA or California)

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2 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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3 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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4 If the OBDII System is identified on the VECI label, the procedure in Section 2 through 5 shall be followed.

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4.1 An inspection of the OBDII System shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

Compliance Assurance Inspection

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1 A vehicle that is referred to the I/M Technical Center for a Compliance Assurance Inspection shall be subject to an official emissions inspection. A visual anti-tampering inspection shall also be included in every Compliance Assurance Inspection. The air pollution control devices listed in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the VECI label is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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1.1 A vehicle that has missing or tampered air pollution control devices will fail the Compliance Assurance Inspection and will not be issued a Certificate of Compliance.

1.2 A vehicle that has missing or tampered air pollution control devices and has already been issued a Certificate of Compliance will be required to replace or

repair the devices. Owners/operators of vehicles that do not comply will be subject to the penalties in this Regulation.

- 2 The Department will use data obtained by the Utah Division of Motor Vehicles and inspection data to determine if a vehicle should be subject to a Compliance Assurance Inspection.
- 3 The owner/operator of a vehicle subject to a Compliance Assurance Inspection will be notified in writing of the requirement to present the vehicle for inspection.

Referee Inspection

- 1 Vehicles may be referred to the I/M Technical Center for a Referee Inspection. During a Referee Inspection the Department may override the normal testing criteria and issue a Certificate of Compliance for the following reasons:
 - 1.1 The vehicle will not communicate with the Certified Testing Equipment but will communicate with other scan tools. The vehicle must meet all other testing requirements including readiness status and MIL status; or
 - 1.2 The vehicle has met the criteria to be issued a Waiver.
- 2 A Referee Inspection may also be performed when an owner/operator believes the emissions inspection performed at an I/M Program Station was not done correctly.

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OBDII Test Procedures

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On-Board Diagnostics (OBD) is the monitoring and fault detection/notification process of the Powertrain Control Module (PCM) related to the vehicle's emission control system and powertrain operation on 1996 and newer model year vehicles. When an emissions control malfunction is detected, a dashboard light illuminates, displaying one of the following: "Check Engine," "Service Engine Soon," or the international engine symbol. If the OBD system detects a problem that may cause vehicle emission to exceed applicable federal standards, the Malfunction Indicator Light (MIL) is illuminated and the appropriate diagnostic trouble code (DTC) and engine operating conditions will be stored in PCM memory.

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1.0—Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.

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1.1—If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

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1.2—If the DLC is inaccessible, the problem must be remedied before the test can continue.

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2.0—Turn the ignition switch to the off position for at least 30 seconds.

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3.0—Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. Enter your visual inspection result into the test equipment.

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3.1—If the MIL does not illuminate, the vehicle fails the test and must be repaired.

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4.0—Turn the ignition switch to the off position for at least 30 seconds.

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5.0—Start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the test equipment screen prompts until the test is complete.

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6.0—For 1996-2000 model year vehicles two (2) not ready flags are allowed for a passing test. For 2001 and newer vehicles one (1) not ready flag is allowed. If the not ready status exceeds these numbers the vehicle must be driven additional miles until readiness monitors are set “ready” or repairs have been made allowing readiness flags to set ready.

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6.1—A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420—P0439) must have the catalyst monitor set to “ready” upon re-inspection.

7.0 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.

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8.0 Certain vehicles have been determined to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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9.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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10.0 A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.

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Two-Speed Idle (TSI) Test Procedures

During a two-speed idle test, the Analyzer measures the tailpipe exhaust emissions of a vehicle while the vehicle idles at both high and low speed. The Analyzer tests vehicles for carbon dioxide in addition to hydrocarbons and carbon monoxide. The two-speed idle test comprises two phases: (1) high speed test (2200-2800 RPMs) for the first phase of the emissions test; then, (2) tested at idle (350-1100 RPMs).

1.0 The Certified Emissions Inspector shall not inspect or test any motor vehicle with a mechanical condition which may cause injury to inspection personnel or damage to the inspection station or test equipment or which may affect the validity of the test, until such condition is corrected. Such conditions include, but are not limited to: coolant, oil, or fuel leaks; low oil or low fluid levels; and high visible emissions.

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2.0 Prepare the Analyzer for testing as specified by the manufacturer.

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3.0 Each vehicle shall be checked to determine that it is at normal operating temperature by feeling the top radiator hose or by checking the temperature gauge. Each vehicle shall be at normal operating temperature before performing the emissions inspection.

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4.0—The inspection shall be performed with the transmission in “park” or “neutral” and with all accessories off and the emergency brake applied.

5.0—The Analyzer probe shall be inserted into the exhaust pipe at least twelve inches or as recommended by the Analyzer manufacturer, whichever is greater.

6.0—If a baffle or screen prevents probe insertion of at least twelve inches, a suitable probe adapter or snug fitting, non-reactive hose which effectively lengthens the exhaust pipe shall be used.

7.0—For all vehicles equipped with a multiple exhaust system that does not originate from a common point, both sides shall be tested simultaneously with an approved adapter.

8.0—When inspecting a vehicle under windy conditions, the tailpipe shall be shielded from the wind with a suitable cover.——

9.0—With the tachometer properly attached, the vehicle shall be tested by following the screen prompts, answering questions, and entering required data. Vehicles failing because of excessive exhaust dilution shall repair the dilution problem prior to continuing the emission test. The dilution standard shall be contained in the Analyzer specifications provided by the approved vendor.

~~10.0 The Certified Emissions Inspector shall verify the presence of a gas cap and enter the information into the Analyzer.~~

~~11.0 Certain vehicles cannot be tested in the high speed (2200-2800 RPM) mode. The test equipment software will maintain a list of these vehicles and perform a modified test.~~

~~12.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

~~13.0 A Certificate of Compliance shall be issued if the vehicle emissions levels are the same as or less than the applicable cutpoint standards as referenced in Appendix B, and the vehicle has a gas cap present.~~

~~14.0 Switchable Bi-Fuel vehicles shall be tested on both fuels. The software will require two separate tests for these vehicles.~~

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~~Diesel Powered Vehicles Test Procedures~~

~~1.0 All diesel powered vehicles 2007 and newer, less than 14,001 lbs GVWR, shall be tested in accordance with the following procedure:~~

~~1.1 Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.~~

~~1.1.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.~~

~~1.1.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.~~

~~1.2 Turn the ignition switch to the off position for at least 30 seconds.~~

~~1.3 Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. Enter your visual inspection result into the test equipment.~~

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~~1.3.1 If the MIL does not illuminate, the vehicle fails the test and must be repaired.~~

~~1.4 Turn the ignition switch to the off position for at least 30 seconds.~~

~~1.5 Start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the test equipment screen prompts until the test is complete.~~

~~1.6 If the vehicle has 1 or more monitors "not ready", follow the attached flowchart to determine whether the readiness check will be marked as pass or fail.~~

~~1.6.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420–P0439) must have the catalyst monitor set to "ready" upon re-inspection.~~

~~1.7 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.~~

~~1.8 Certain vehicles have been determined by the EPA to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.~~

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~~1.9—A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.~~

~~2.0—All diesel powered vehicles 1998-2006, less than 14,001 lbs GVWR, shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the emission decal shall be in place and apparently operable on the vehicle. If the decal is missing the vehicle owner/operator shall have the decal replaced.~~

~~2.1—The devices listed on the decal must be present and apparently operable to pass the emission inspection.~~

~~2.2—If the OBD II system is identified in the emission decal, the procedure in Section 1.1 through 1.5 shall be followed.~~

~~2.3—If the decal is missing, the I/M Program Station and/or the Certified Emissions Inspector may use reference material as approved by the Department to identify the air pollution control devices required for the vehicle.~~

~~2.4—A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

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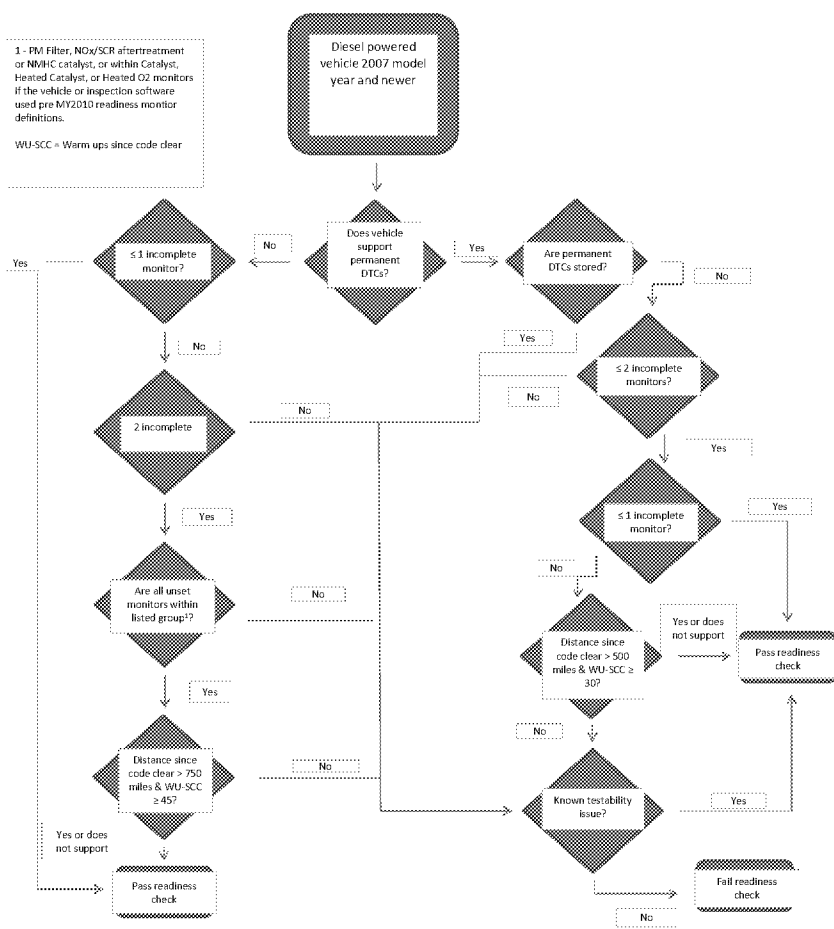
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2.5—A Certificate of Compliance shall be issued if the emissions control devices are in place and apparently operable. An inspection of the OBD-II system as referenced in Section 2.2 shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

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Diesel Readiness Check Flowchart



APPENDIX E -- Technical Specifications and Calibration Gas CERTIFIED TESTING EQUIPMENT STANDARDS

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I. General

This appendix contains specifications for Contractors to design Certified Testing Equipment to be used in the Cache County I/M Program.

1.1 Design Goals

Certified Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment. The software must be designed for maximum operational simplicity. The software must prevent users from clearing Diagnostic Trouble Codes (DTC), changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Certified Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data.

These technical specifications contain the minimum requirements for Certified Testing Equipment used to perform official emissions inspections in Cache County, UT.

1.2 Manuals

All Certified Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions.

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maintenance instructions, and initial startup instructions. The manual may be provided in electronic format and shall be accessible from the Certified Testing Equipment.

1.3 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Certified Testing Equipment.

The Contractor shall provide a minimum of one-year warranty coverage on each unit of Certified Testing Equipment sold or leased. The one-year warranty coverage shall begin on the date of purchase and shall be included in the unit pricing for the Certified Testing Equipment. An extended warranty shall be made available to the I/M Program Stations that purchase or lease Certified Testing Equipment.

1.4 Contractor Provided Services

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Certified Testing Equipment:

- Delivery, set-up, and verification of proper functionality of the Certified Testing Equipment; and
- Training on the use and maintenance of the Certified Testing Equipment.

The Contractor shall provide the following services to the I/M Program Station during the initial one-year warranty coverage period and thereafter to any I/M Program Station that purchases an extended warranty:

- Full system support and repair as detailed in the warranty coverage agreement; and
- Appropriate service response, either on-site or remote, by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, and national/state holidays (New Year's Day, Human Rights Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), of a request from the I/M Program Station. All system repairs, component replacements, and/or Certified Testing Equipment adjustments must be accomplished within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Certified Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.5 Tamper Resistance

The Certified Testing Equipment operators, Department personnel, and Contractor authorized service technicians shall be prevented from changing any inspection results, programs, or data contained on the Certified Testing Equipment. The Contractor shall use appropriate software and/or hardware provisions to protect files and programs.

2 – Hardware/Software Requirements

2.1 Accessing the OBD System

The Certified Testing Equipment must include hardware and software necessary to access the on-board computer systems of vehicles subject to OBD inspections. This includes the following:

- 1996 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 8,500 pounds or less
- 2008 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less
- 2007 and newer diesel and diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less

The Certified Testing Equipment shall be compliant with the recommended practices regarding OBD inspections contained in J1962, J1978, and J1979 as published by the Society of Automotive Engineers (SAE). The Certified Testing Equipment must be able to connect to the vehicle's data link connector (DLC) and access, at a minimum, the following OBD data:

- Service modes \$01, \$03, \$06, \$07, \$09, \$0A

The Certified Testing Equipment must be capable of communicating with all OBD vehicles that use, at a minimum, the following communications protocols:

- International Organization for Standardization (ISO) 9141
- Variable Pulse Width (VPW)
- Pulse Width Modulation (PWM)
- Keyword Protocol 2000 (KWP)
- Controller Area Network (CAN)

2.2 Barcode Scanner

The Certified Testing Equipment must include a bar code scanner capable of reading both 1D and 2D barcodes. The bar code scanner must be able to read the barcode through a windshield. The barcode scanner must be able to withstand multiple 6.5 foot (2 meter) drops to concrete and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

The bar code scanner may be a stand alone device or may be integrated into the Certified Testing Equipment.

2.3 Camera

Certified Testing Equipment shall be equipped with video capturing equipment. The video capturing equipment must capture video from each official emissions inspection.

1.0—GENERAL

This appendix contains specifications for Emission Inspection System Contractors (hereafter, Contractors) to design Testing Equipment to be used in the Cache County Vehicle Emissions Inspection and Maintenance Program (hereafter, I/M Program). Testing Equipment to be used in the I/M Program must be capable of performing consistent Two-Speed Idle (TSI), and On-Board Diagnostics (OBD) emissions inspections.

1.1—Design Goals

Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment and have a useful life of at least five years. The software must be designed for maximum operational simplicity and be capable of providing emissions readings or codes that can be used for vehicle diagnostics. A manual, non-test mode should be available to perform vehicle diagnostics. The software must prevent users from clearing Diagnostic Trouble Codes, changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data, record unauthorized entry, also known as tampering, and prevent subsequent inspections when tampering is detected.

These technical specifications contain the minimum requirements for Testing Equipment used to perform emissions inspections in the I/M Program. Contractors may include additional items with approval from the Bear River Health Department (hereafter, the Department).

1.1.1—Identification Data

A nameplate including the following information must be permanently affixed to the housing of the Testing Equipment:

- Name and address of manufacturer;
- Model description;
- Serial number; and
- Date of assembly.

In addition, the Contractor shall affix a label to the housing of the Testing Equipment that contains a toll-free telephone number for customer service. This telephone number must also be displayed on error messages that recommend the need for service by the manufacturer.

The Testing Equipment must also electronically display:

- Nameplate data;
- Testing Equipment number; and

- ◆ ~~Propane Equivalency Factor (PEF).~~

1.2 Manuals

All Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial startup instructions. The manual may be provided in an electronic format and should be accessible from the Testing Equipment.

1.3 Certification Requirements

The Contractor shall submit a letter to the Department stating that the Testing Equipment model sold or leased by the Contractor or its authorized representatives satisfies all design and performance criteria described in these specifications. Unless otherwise specified, a copy of the software documentation listed below must be submitted to the Department as part of the certification application. The documentation must include, at a minimum, the following:

- ◆ ~~Complete program listing(s);~~
- ◆ ~~Functional specifications;~~
- ◆ ~~Functional flowcharts of the software;~~
- ◆ ~~Example inputs and outputs from all processes;~~
- ◆ ~~Detailed interface information on system components including the identification of protocol and output specifications; and~~
- ◆ ~~File layouts.~~

To ensure proper maintenance of all Testing Equipment, a full description of the Contractor's service procedures and policies, sample contracts, warranties, and extended service agreements must be provided as part of the certification application. The Contractor shall provide a training plan to the Department that will be used to conduct certification training of potential inspectors on the use of the Testing Equipment. The Contractor shall supply to the Department and maintain at least one piece of Testing Equipment.

1.3.1 Escrow of Software

The Contractor must submit a letter of corporate authorization agreeing to place software source codes and other pertinent technical information in an escrow placement approved by the Department. The Contractor shall contract with the approved escrow company and provide the Department with a copy of the contract including the Department as a beneficiary. Certification of the Testing Equipment will not be valid until this condition has been met.

The Contractor must place in escrow the most recent version of the Testing Equipment software, including but not limited to, the actual software code and related materials used to meet this specification. The software will be turned over to the Department only if the Contractor defaults or cannot ensure continued performance of the contract.

In the event that the software is transferred, the Department shall protect it from public dissemination and commercial usage to the extent required by law. The software may be used, maintained, and updated by the Department, or its assignee, to support the I/M Program. At a minimum, the Department shall:

- Limit source code access to parties necessary to maintain and update the analyzers;
- Require all parties to sign a non-disclosure agreement before obtaining access to the code; and
- Grant no license permitting an entity to use any part of the codes for any commercial purpose other than to update and operate the analyzers.

The Department is not interested in the disclosure of proprietary information or the detailed inner workings of the software. However, it is essential that the software, schematics, and drawings be available in case the Contractor defaults.

As a prerequisite to certification, the Contractor shall furnish a performance bond to the Department. This bond must be in a form approved by the Department, executed as a surety by a bonding company authorized to do business in the State of Utah, and signed by a licensed resident agent. The performance bond must be for \$250,000 and must remain valid for the entire time period that the Contractor participates in the I/M Program. The performance bond must cover all Testing Equipment that is certified to conduct emissions inspections in the I/M Program.

The performance bond may be used by the Department at any time if the Contractor is in default of the requirements of these specifications, including but not limited, to the following "Events of Default":

- A. The Contractor fails to remedy a breach of covenant, representation, or warranty required by these specifications within thirty (30) days after written notice of such breach has been given to the Contractor by the Department;
- B. The Contractor makes a general assignment for the benefit of creditors, admits in writing its inability to pay debts as they mature, institutes proceedings to be adjudicated upon voluntary bankruptcy, consents to the filing of a bankruptcy proceeding against it, files a petition or answer or consent seeking reorganization, readjustment, arrangement, composition, or similar relief under federal bankruptcy or any other similar applicable law(s), consents to the filing of any such petition, consents to the appointment of a receiver;

liquidator, trustee, or assignee in bankruptcy or insolvency of the manufacturer or a substantial part of its property, or takes action to further any of these purposes; or

C. A court of competent jurisdiction enters a decree or order adjudging the Contractor as bankrupt or insolvent, or approving a properly filed petition seeking reorganization, readjustment, arrangement, composition, or similar relief for the Contractor under the federal bankruptcy or any other similar applicable law(s), and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or a decree or order of a court of competent jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of the manufacturer or of a substantial part of its property, or for the liquidation of its affairs, is entered, and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or any substantial part of the property of the Contractor is sequestered or attached and is not returned to the Contractor or released from such attachment within sixty (60) days thereafter.

To require performance by the surety under the performance bond, the Department shall give written notice of the event of default to the Contractor, specifying the date upon which the surety performance must begin.

The Director or his designee shall release the performance bond once it is determined that the Contractor has satisfactorily completed its obligations in accordance with the terms of these specifications, or at an earlier date, if it is determined by the Director to be in the best interest of the Department.

1.4 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the IM Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Testing Equipment.

The original manufacturer's warranty must be a minimum of one year from the date of purchase. An extended warranty service agreement must be available to the Testing Equipment owner upon the expiration of the manufacturer's original warranty period. Cost disclosures of consumable inventory items and extended warranty service agreements with detailed descriptions of coverage must be available to all Testing Equipment owners.

The cost of extended warranty service agreements must be identified in the Contractor's response to the RFP.

~~1.5 Contractor Provided Services~~

~~A Contractor authorized repair technician is a Testing Equipment service technician that is authorized by the Contractor to perform service on their fleet of Testing Equipment. Only Contractor authorized repair technicians may access the secure areas on the Testing Equipment.~~

~~The Contractor authorized repair technician shall perform a gas calibration prior to returning an Analyzer to service whenever a component of the emissions measurement system is repaired or replaced. Similarly, the Contractor authorized repair technician shall perform a leak check each time the Analyzer's sample line is broken and repaired. Contractor authorized repair technicians shall have software driven menu options or other acceptable method that records the transfer of inspection station, inspector information, and other data from one unit of Testing Equipment to another without manual inputs or the transfer of previous data.~~

~~The Department may require the Contractor to conduct on-site or laboratory testing of the Testing Equipment in order to document continued compliance. The Contractor shall supply the I/M Program Station a temporary replacement unit of Testing Equipment that meets the I/M Program requirements if a unit of Testing Equipment is removed from the I/M Program Station for repair or testing. The Contractor shall be responsible for any costs incurred under this requirement.~~

~~The Contractor shall correct software features that do not meet these specifications to the satisfaction of the Department. The enhancement of operational software must be specified by the Department and be designed to update through the internet. Unless authorized by the Department, software enhancements must be available for beta testing within 120 days of commencement of a software update contract and receipt of an updated Testing Equipment specification. The Contractor shall not modify any existing Testing Equipment software without obtaining approval from the Department.~~

~~The Contractor shall be responsible for training Department officials responsible for oversight of the I/M Program, including but not be limited to, the instruction on all operational, maintenance, and quality control features of the Testing Equipment sampling system, full access to and use of inspection, audit, and calibration menus, and optional programs offered to inspectors. This training must be conducted at the Contractor's expense as a condition of certification, and upon written request by the Department.~~

~~The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Testing Equipment:~~

- ~~◆ Delivery, installation, calibration, and verification of the proper operating condition of the Testing Equipment;~~
- ~~◆ Two extra sample filters with each TSI Analyzer, and an additional printer cartridge or a certificate redeemable for a printer cartridge for all Testing Equipment;~~

- ◆ ~~A minimum of two hours operation and maintenance training to the owners and operators for each unit of Testing Equipment purchased or leased.~~

The Contractor shall provide the following services to the I/M Program Station as part of the manufacturer's original warranty and thereafter as a portion of the extended warranty service agreement.

- ◆ ~~Full systems support and repair, including temporary provision of units of equal quality and specification;~~
- ◆ ~~Quarterly examination, calibration, and routine maintenance of Analyzer and sampling systems on the TSI Analyzers. Annual examination must be required on the OBD portion of the Testing Equipment.~~
- ◆ ~~On-site service response by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, national/state holidays (New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), and other days the purchaser's business might be closed, of a request from the I/M Program Station. The names, toll free telephone number(s), and service facility addresses of the Contractor's representatives responsible for Equipment service must be provided to the I/M Program Station. All system repairs, component replacements, and/or Testing Equipment adjustments, including reset of quality control lockout systems, must be accomplished on-site within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.~~

1.6 Electronic Transmission Security

The Testing Equipment shall utilize a standard protocol encryption method for communications with the host incorporating error detection and not incorporating error correction. The Testing Equipment shall utilize checksum checking for all messages.

1.7 Tamper Resistance

The controlled access design must be the responsibility of the Contractor, but all security measures must be submitted to the Department for approval. The Testing Equipment operators, Department personnel, and field representatives authorized by the Contractor shall be prevented from creating or changing any inspection results, programs, or data contained on the Testing Equipment. The Contractor shall use appropriate software and hardware provisions to protect I/M files and programs. The file and program protection may consist of mechanical systems in combination with electronic and software systems. The protection features must prevent access to the secured portions of the hard disk containing I/M programs and inspection data. The control key or its functional

equivalent, which gives access to the operating system (OS), must not be activated except through the use of a password on the audit menu. The password must be chosen by the Department at the time of certification testing. Other security or protection alternatives may be proposed by the Contractor for approval by the Department.

The Contractor shall, at a minimum, develop tamper resistant features to prevent unauthorized access through the Testing Equipment cabinet. Micro switches, keyed and software controlled locks, and software algorithms requiring the use of an access code must all be used where appropriate. Any unauthorized access to the secured areas of the Testing Equipment must be detected, even when the power is off. A software lockout algorithm must be activated should tampering occur, which would abort any existing inspection sequence and prevent further inspections until the lockout is cleared by a field representative authorized by the Department. The Contractor shall develop a system to allow Contractor authorized repair technicians to clear tamper lockouts only during authorized service calls. The lockout system must be designed so that it can be activated from the audit menu by Department personnel. The Contractor may use keyed locks on the cabinet doors to secure the disk drives as long as the locks are built in and can be changed by authorized personnel should a security problem be identified. A software controlled solenoid lock may also be used on the secured drive door of the Testing Equipment. The solenoid lock may be used instead of or in addition to any key or combination lock that may be provided. The Testing Equipment software must control the solenoid lock and unlatch the doors in response to authorized requests from the audit menu while maintaining the appropriate levels of security.

A tamper file must be created that includes the date, time, type, and location of the tamper lockout, date and time the lockout was cleared, and who cleared the lockout. The tamper lockout type and location must be accessible only through the lockout function of the Testing Equipment's audit menu.

Access to the compact disc drive (CD), if applicable, must be available to I/M Program Station personnel at all times. However, access to the BIOS, I/M related programs, and data must be secured separate from the CD and additional drives. The Contractor shall provide a security method approved by the Department for the CD drive(s) to prevent unauthorized reads, writes, and executable. However, the Contractor may offer Testing Equipment with additional disk drives that can run optional software application programs.

The Testing Equipment must prevent Contractor authorized repair technicians from performing the following, except in a manner approved by the Department:

- Clearing a state lockout;
- Clearing a lockout for a failed three day gas calibration or leak check;
- Adding, deleting, or modifying test data;
- Adding, deleting, or modifying I/M Program Station information or an Certified Emissions Inspector's license number; and

- ◆ ~~Altering the calibration gas bottle values.~~

~~1.8 Automated Inspection Process Software and Displays~~

~~The inspection process, data collection, and quality control features of the Testing Equipment must be automated as much as possible. The software must automatically select the emission standards for the vehicle from an internal reference table. Vehicle identification information must be derived from a database accessed over a real time data system to the Testing Equipment. Access to the Vehicle Identification Database (VID) shall be accomplished by entry of the vehicle identification number (VIN) in its entirety. Provisions must be made for manual entry of data for vehicles not in the reference files of the Testing Equipment. The Contractor in consultation with the Department shall customize how the emission testing results are displayed on the Testing Equipment and on the approved paperwork provided to the owner of the vehicle.~~

~~2.0 HARDWARE REQUIREMENTS~~

~~2.1 Overview~~

~~The hardware requirements for the Analyzer must meet or exceed specifications as published by the California Bureau of Automotive Repair (BAR) and contained in the "BAR-97 EMISSIONS INSPECTION SYSTEM SPECIFICATIONS" (BAR-97), dated May 1996, except where reference is made to ASM testing and NOx gas measurement requirements. The Analyzer may include all amendments made to the BAR-97 hardware specifications to present date. Each Analyzer shall be equipped with Bar Code Scanner, Engine Revolutions per Minute Detection System and Real Time Inspection Testing Monitoring System.~~

~~2.2 Accessing the OBD System~~

~~The Testing Equipment must include hardware and software necessary to access the on-board computer systems on all model year 1996 and newer gasoline and natural gas powered vehicles. The Testing Equipment must also be able to access the on-board computer system on all model years 2007 and newer diesel powered vehicles. The equipment design and operation of the Testing Equipment must meet the federal requirements contained in Title 40 of the Code of Federal Regulations (CFR), Chapters 85.2207-2231 and the recommended practices regarding OBD inspections contained in the J1962, J1978 and J1979 published by the Society of Automotive Engineers (SAE). The Testing Equipment must be able to connect to the vehicle's OBD connector and access, at a minimum, the following OBD data:~~

- ◆ ~~Service modes: \$01, \$03, \$06, \$07, \$09, \$0A~~

~~At a minimum, the Testing Equipment must also be capable of communicating with all OBD vehicles that use the following communications protocols:~~

- ◆ ~~International Organization for Standardization (ISO) 9141;~~

- ◆ ~~Variable pulse width (VPW) as defined in the SAE's J1850;~~
- ◆ ~~Pulse width modulation (PWM) as defined in the SAE's J1850;~~
- ◆ ~~Keyword protocol 2000 (KWP); and~~
- ◆ ~~Controller area network (CAN) as defined in the ISO 15765-4.3:2001.~~

The OBD interrogation process must be fully integrated into the Testing Equipment, automated, and require no inspector intervention to collect and record the OBD data retrieved via the OBD connector link. No separate interface may be used.

2.3 ~~OBD Inspection Equipment~~

The OBD inspection Equipment apply only to the OBD communication components, which must meet all federal requirements contained in 40 CFR §§85.2207 – 85.2231 and recommended practices contained in the J1962, J1978, and J1979 published by the SAE. The Equipment must meet criteria contained in the EPA's guidance document, "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program" (EPA, 2001) or EPA's applicable update to this document.

2.4 ~~Bar Code Scanner~~

The bar code scanner must be able to read a one-dimensional (1-D) and a two-dimensional (2-D) bar code through a windshield and use visible laser diode technology or an equivalent approved by the Department. The bar code scanner must not be able to read Universal Product Code (UPC) 1-D bar codes. The bar code scanner must be able to withstand multiple drops to concrete covering a distance of at least 4 feet and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

2.5 ~~Engine Revolutions per Minute Detection~~

Testing Equipment must be equipped with a tachometer, or equivalent software and hardware necessary to detect engine RPM from the original equipment manufacturer (OEM) ignition technologies in use at the time of certification. Possible updates may be required to enable future ignition systems to be monitored for engine RPM. A software "HELP" screen must be available to help the Certified Emissions Inspector locate an RPM signal. The cable-type connection must be at least 25 feet long (measured from the front of the Testing Equipment).

Based on the vehicle identification information available to the Certified Emissions Inspector, the Testing Equipment must display messages indicating when the vehicle under inspection requires a specific type or method of the tachometer pick-up connection. A digital display tachometer must be displayed to measure engine speed. For TSI Analyzers, RPM readings must be recorded on a second-by-second basis for the 10 second or 5 second period that is used to determine the pass or fail status of the TSI emissions inspection, respectively. The tachometer operation must use one of the following means:

- ◆ ~~Radio frequency-type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles using distributorless ignition systems (DIS);~~
- ◆ ~~Cable-type connection capable of detecting engine RPM of current OEM ignition technology;~~
- ◆ ~~Battery/accessory power connection; or~~
- ◆ ~~Cable-type connection capable of detecting engine RPM via the OBD port.~~

During the official inspection process the Testing Equipment must prompt the Certified Emissions Inspector to shut the engine off while connecting the cable-type RPM connection. The RPM bypass function must be made available when the live engine RPM is displayed for the first time. If the RPM cannot be obtained, the Certified Emissions Inspector shall be allowed to bypass the RPM. The Certified Emissions Inspector must simultaneously strike at least two keys to activate the RPM bypass. The bypass function must no longer be available once the emission inspection has begun.

The Certified Emissions Inspector may use the previously listed methods for 1996 and newer model-year vehicles if the OBD port is unable to detect engine RPM. Tachometer performance must be no less than a 0.5-second RPM response time with an accuracy of ± 3 percent of actual RPM.

2.6 ~~Real-Time Inspection Testing Monitoring System~~

All approved Testing Equipment conducting official emission testing shall be equipped with video capturing equipment. An I/M Program Station will be in violation if the video capturing equipment is not properly maintained or installed and capturing images of each inspection. If video equipment is not fully operational, the I/M Program Station must contact the Contractor immediately for repair or replacement.

2.7 ~~Inspection Restrictions Based on Current Calibrations~~

The Analyzer must:

- ◆ ~~prevent TSI emissions inspections if the leak check has not passed in the last 24 hours;~~
- ◆ ~~prevent TSI emissions inspections if the gas calibration has not passed in the last 72 hours;~~

The Testing Equipment must display appropriate error messages that indicate when a leak check or other calibration is needed to allow TSI inspections to be performed.

2.8 ~~Running Changes and Other Hardware Modifications~~

Changes to design characteristics, component specifications, or any other modifications to the Testing Equipment hardware must be approved by the Department. The Contractor is responsible for confirming that such changes will have no detrimental effect on

performance of the Testing Equipment. The Department may require testing at approved beta test sites prior to the release of the modifications.

All proposed hardware modifications must be thoroughly tested by a third party before being submitted to the Department, and be accompanied by a cover letter containing the following information:

- Description of all of the proposed modifications to be performed, a parts list, and the installation instructions for the Contractor-authorized repair technician;
- Test data and an engineering evaluation regarding the effects of the proposed modification(s) on the performance and reliability of the Testing Equipment for any modifications to the bench or sample system;
- Timeline showing timeframe in which the modifications are expected to occur and the number of existing units of Testing Equipment that will be updated;
- Description of any special procedures that are needed to perform the hardware modifications; and
- Documentation for any software update that would be required for the proposed hardware modifications.

2.9 Exhaust Gas Analysis Equipment Specifications

This section defines the requirements for the components needed to determine the concentrations of the exhaust gases during the TSI inspections.

2.9.1 Measured Gases

The Analyzer must measure hydrocarbons (HC) as hexane in parts per million (ppm); carbon monoxide (CO); carbon dioxide (CO₂); and oxygen (O₂) in percent. The Analyzer must have a digital display for vehicle engine speed and exhaust concentrations of HC, CO, CO₂, and O₂ and must be capable of measuring exhaust concentrations of HC, CO, CO₂, and O₂ at a minimum sample rate of twice per second.

2.9.2 Warm-up Conditions

The Analyzer must reach stability within 30 minutes from startup at 35 degrees Fahrenheit (°F). The Analyzer must be considered warmed-up when the internal verifications are complete and the zero and span readings for HC, CO, CO₂, and O₂ have stabilized within the allowable accuracy values for five minutes without adjustment. If stabilization has not been reached within an allotted time frame, then the Analyzer must prevent TSI inspection sequences and display a message instructing the Certified Emissions Inspector to call for service. Functional operation of the gas sampling system must remain disabled through an internal lockout until the instrument meets stability and warm-up requirements.

2.9.3 Sampling System Components

A) General:

The sampling system must extract exhaust gas from a subject vehicle, remove particulate matter and aerosols from the sampled gas, drain the condensed water from the sample if necessary, and deliver the resultant gas sample to the Analyzer's sensors for analysis. The sampling system must, at a minimum, consist of a tailpipe probe, flexible sample line, continuously draining water removal system, particulate trap, sample pump, and flow control components. Provisions must be made for the introduction of zero air and calibration gases. Materials that are in contact with the gases sampled must not contaminate or change the composition of the gases to be analyzed, including gases from vehicles not fueled by gasoline. The system must be designed to be corrosion resistant and to withstand vehicle exhaust.

B) Sample Probe and Hose Criteria:

Sample hose must be 25 feet in length with a tolerance of ± 0.5 feet when measured from the front of the Analyzer cabinet. The hose must be composed of non-kinking material that will not be affected by or react to the exhaust gases. Sample hose and probe provided with each Analyzer must withstand exhaust gas temperatures at the probe tip of up to 1,100°F for 10 minutes. Use of dissimilar metals with thermal expansion factors of more than 5 percent must not be used in either the construction of probes or connectors.

A positive means of retention must be incorporated to prevent the probe from slipping out of the tailpipe when in use.

A thermally insulated securely attached hand grip must be provided on the probe to ensure easy probe insertion using one hand.

The probe must be designed so that the tip extends 16 inches into the tailpipe and at least 10 inches into the vehicle's exhaust.

The probe tip must be shielded to avoid inadvertent debris collection and sealed to prevent any sample dilution when it is inserted into the tailpipe. Use of a tailpipe extension is permitted as long as the extension does not change the exhaust back pressure by more than ± 1 inch of water pressure.

A straight probe tip must be provided that is bent less than 15 degrees, made of stainless steel solid wall tubing with a 3/16 inch outside diameter, and designed so the connector between the removable probe tip and the rigid portion of tubing is up inside the tailpipe at least three inches to reduce the effects of any leak that might occur.

A probe tip cap suitable for performing a leak check must be provided if the vacuum decay method for performing a leak check is used. Otherwise, all hoses and connectors that are necessary to perform a leak check must be provided.

The sample system must include equipment necessary to inspect vehicles equipped with dual exhaust pipes. The flow in each leg of the dual exhaust probe sample system must be equal.

C) Particulate Filter and Water Trap:

- The particulate filter must be capable of trapping 97 percent of all particulates and aerosols five microns or larger;
- The filter must not absorb or adsorb HC;
- The filter housing must be transparent to allow the operator to observe the filter's condition without removing the housing. The filter must be removable and reliably seal after replacement;
- The water trap must be sized to remove exhaust sample water from vehicles fueled with, or a combination of gasoline, propane, compressed natural gas (CNG), oxygenated fuels, and alternative fuels. The filter bowl, filter, and housing must not react to these fuels or the vehicle's exhaust gases. The condensed water must be continuously and sufficiently drained from the water trap's bowl to prevent condensation in the sample system or in the optical bench's sample cell; and
- Incorporate a back-purge system.

D) Low Flow Indicator:

The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that detects sample flow degradation. The Analyzer must display a low flow condition message when flow rate causes the measurement error for any gas to exceed 3 percent of the gas value used for calibration or audit or causes the analyzer response time to exceed 13 seconds to 90 percent of a step change in input, whichever is less. The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.

E) Analyzer lockout:

The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that must indicate when sample flow degradation for any gas other than NO causes:

- The measurement error to exceed 3 percent of the gas value used for checking; or

- ~~The Analyzer response time to exceed 13 seconds for a 90 percent step change in input.~~

~~The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.~~

3.0 ~~Analyzer Requirements~~

3.1 ~~Gas Calibration~~

A) ~~General:~~

~~The Analyzer must automatically require and successfully pass a leak check and a gas calibration for HC, CO, CO₂, and O₂ by a method that is approved by the Department. The Analyzer must not allow an error of more than 2 percent of the readings using the high and low range span gases for TSI inspections. The Analyzer must automatically prohibit the performance of the tailpipe portion of the vehicle emissions inspection when readings exceed the 2 percent error tolerance. The Analyzer channels must be adjusted to the center of the allowable tolerance range as a result of the gas calibration procedure. The standard gases to be used to calibrate and audit the Analyzer must meet the requirements in the Federal Clean Air Act, §207(b) and described in Subpart W of Part 85 of Chapter I, Title 40 of the CFR. All standard gases purchased by the IM Program Station for use in the Analyzer must conform to the requirements established by the BAR for emissions inspection analyzer calibration gases and the National Institute of Standards and Technology (NIST).~~

B) ~~Gas Calibration Procedure:~~

- ~~The Analyzer must maintain accuracy between gas calibrations taking into account all errors, including noise, repeatability, drift, linearity, temperature, and barometric pressure;~~
- ~~The Analyzer must automatically require a zero gas calibration and a high and low range gas calibration for HC, CO, CO₂, and O₂, where applicable. The Analyzer must record the gas reading data prior to the adjustment and other data pertinent to control charting Analyzer performance;~~
- ~~The gas calibration must be accomplished by the following method: Calibration gases that meet the requirements of Section 3.1: Calibration Gases for TSI Analyzers must be introduced into the calibration port of the Analyzer. The pressure in the sample cell must be the same with the calibration gas flowing as with the sample flowing during an inspection. Once the pressure is the same, the Analyzer must perform a zero gas calibration and a leak check. The leak check must ensure that the entire sample system does not leak.~~

3.2 ~~Calibration Gases for TSI Analyzers~~

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The following gases must be used for the two-point calibration and audit.

A) Low Range Calibration Gas

HC = 200 ppm propane
 CO = 0.5 percent
 CO₂ = 6.0 percent
 O₂ = Shop Air
 N₂ = Balance 99.99 percent pure

B) High Range Calibration Gas

HC = 3200 ppm propane
 CO = 8.0 percent
 CO₂ = 12.0 percent
 O₂ = Shop Air
 N₂ = Balance 99.99 percent pure

3.3 Dilution

The flow rate of the Analyzer must not cause more than 10 percent dilution during sampling of vehicle exhaust gases from a 1.6 liter engine at normal idle. Ten percent dilution is defined as a sample of 90 percent exhaust and 10 percent ambient air.

3.4 Calibration Prompts and Gas Usage

The Analyzer must display prompts to guide the inspector through the gas calibration procedure in a manner that minimizes the amount of gas used. The Analyzer must be designed to keep the loss of calibration gas to less than 0.5 liter in 24 hours when the valve on the calibration gas bottle is left open.

3.5 Propane Equivalency Factor

The value of the PEF must range from 0.490 to 0.540 and be displayed in a manner acceptable to the Department for each gas audit and gas calibration point. If an optical bench must be replaced in the field, then the Contractor authorized repair technician must change any external labels to correspond to the PEF of the new bench. The Analyzer must incorporate an algorithm relating PEF to HC concentration. Corrections to the PEF must be made automatically and the corrected PEF value must range from 0.470 to 0.560.

APPENDIX F – WAIVERS FOR “NOT READY” VEHICLESaivers for “Not Ready” Vehicles

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A vehicle owner may be eligible for a Waiver when their gasoline powered vehicle is “Not Ready” and the following conditions are met:

- 1 The vehicle is not subject to a modified OBDII test because of OBD deficiencies;
- 2 The vehicle has an official test performed showing a “Not Ready” status. The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer.
- 3 A second inspection has been performed showing the following:
 - 3.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 3.2 The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles;
 - 3.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 3.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 4 A third inspection has been performed by a second repair station showing the following:
 - 4.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 4.2 The initial and third test dates are separated by at least 14 days and the vehicle has traveled a minimum of 400 miles;
 - 4.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 4.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 5 At least one of the statements must come from the vehicle manufacturer’s dealership repair station. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a “Ready” status. The dealership must also document that the vehicle’s computer is up to date and functioning properly. The computer must be updated if required or recommended by the manufacturer. If the computer is updated the vehicle must complete the appropriate drive cycles following the update.
- 6 The cost requirements as set forth by this Regulation must be met in order to qualify for a Waiver. In order to count labor the repair station must employ individuals with current ASE L1, ASE A8, or other certifications approved by the Department.

A vehicle owner may be eligible for a waiver when their vehicle is "Not Ready" and the following conditions are met:

- ~~1. The vehicle is not subject to a modified OBDII test because of OBD deficiencies.~~
- ~~2. The vehicle has an official test performed showing a Not Ready status. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
- ~~3. A second inspection has been performed showing the following:~~
 - ~~a. Readiness monitors have not changed from Not Ready to Ready.~~
 - ~~b. The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles.~~
 - ~~c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
 - ~~d. A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.~~
- ~~4. A third inspection has been performed by a second station showing the following:~~
 - ~~a. Readiness monitors have not changed from Not Ready to Ready.~~
 - ~~b. The initial and third test dates are separated by at least 14 days and the vehicle has travelled a minimum of 400 miles.~~
 - ~~c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
 - ~~d. A statement is included from a second station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.~~
- ~~5. At least one of the statements must come from the vehicle manufacturer's dealership repair service. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a Ready status.~~

Appendix G ~~Engine Switching~~

Bear River Health Department Regulation 2013-1 states:

~~“Engine switching shall be allowed only in accordance with EPA policy. Vehicles not meeting the requirements of Section 10.0 shall be deemed as tampered and are not eligible for a Certificate of Waiver, unless they are restored to the original engine and emission control configuration.”~~

- ~~1 Engine switching, if not done in accordance with EPA policy, is tampering.~~
- ~~2 A tampering inspection is not a component of the Cache County Emissions Program, except for 1998-2006 diesel vehicles and for any vehicle that applies for a waiver.~~
- ~~3 Engine switching shall be treated as follows:~~

~~Gas engine to gas engine~~

~~1995 and older vehicles — The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~1996 and newer vehicles (8,500 lbs or less) — The vehicle must pass the OBD test.~~

~~1996 — 2007 vehicles (greater than 8,500 lbs) — The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~2008 and newer vehicles (greater than 8,500 lbs and less than 14,000 lbs) — The vehicle must pass the OBD test.~~

~~2008 and newer vehicles (greater than 14,000 lbs) — The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~Diesel engine to diesel engine~~

~~1997 and older vehicles — These vehicles are exempt from testing requirements.~~

~~Vehicles greater than 14,000 lbs — These vehicles are exempt from testing requirements.~~

~~1998 — 2006 vehicles (less than 14,000 lbs) — These vehicles must have a visual inspection. All emissions control devices required for the **engine** must be in place.~~

~~2007 and newer vehicles (less than 14,000 lbs) — The vehicle must pass the OBD test.~~

~~Gas engine to diesel engine~~

***DO NOT perform a two-speed idle test on these vehicles!**

~~1997 and older engine~~—The I/M Program Station will send the vehicle to the Vehicle Technical Center where it will be issued an exemption.

~~1998—2006 engine~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.

~~2007 and newer engine~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.

~~———— Diesel engine to gas engine ————~~

~~1997 and older vehicle~~—These vehicles will likely be registered as diesel vehicle and will be exempt from testing requirements.

~~1998—2006 vehicles~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.

~~2007 and newer vehicles~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.

BEAR RIVER HEALTH DEPARTMENT

REGULATION NO. 2013-1

A REGULATION OF THE BEAR RIVER HEALTH DEPARTMENT FOR A VEHICLE
EMISSIONS INSPECTION AND MAINTENANCE PROGRAM

Adopted by the Bear River Board of Health

May 9, 2013

Updated May 27, 2015

Updated _____, 2019

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1.0 DEFINITIONS

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For the purpose of this Regulation, the following terms, phrases, and words shall have the following meanings, unless otherwise defined:

~~Air Intake Systems: Systems that allow for the induction of ambient air, including preheated air into the engine combustion chamber for the purpose of mixing with a fuel for combustion.~~

Commented [JG1]: This term is not addressed in the regulation and doesn't need to be defined.

~~AIR System: (Air Injection Reaction) A system for providing supplementary air into a vehicle's exhaust system to promote further oxidation of HC and CO gases and to assist catalytic reaction.~~

Commented [JG2]: This term is not addressed in the regulation and doesn't need to be defined.

Alternative Fuel: A fuel that is derived from resources other than petroleum. This includes but is not limited to: natural gas, propane, ethanol, and bio-diesel.

Analyzer: See Exhaust Emissions Gas Analyzer.

Bi-fuel Vehicle: A vehicle that has two separate fueling systems that enables the vehicle to run on one or the other (ex. Gasoline and natural gas). These vehicles may be switchable or non-switchable.

Board: See Board of Health.

Board of Health: The Bear River Board of Health.

Cache County Council: The elected Cache County Council representatives.

~~Calibration: The process of establishing or verifying the accuracy of an Exhaust Emissions Gas Analyzer to perform a consistent evaluation of engine exhaust by using different calibration gases having precisely known concentrations.~~

Commented [JG3]: This term is no longer necessary with the removal of TSI requirements.

~~Calibration Gases: Gases of accurately known concentration that are used as references for establishing or verifying the calibration curve and accuracy of an Exhaust Emissions Gas Analyzer and are approved by the Department for use.~~

Commented [JG4]: This term is no longer necessary with the removal of TSI requirements.

~~Catalytic Converter: A post-combustion device that oxidizes HC and CO gases and/or reduces oxides of nitrogen gases.~~

Commented [JG5]: This term is not addressed in the regulation and doesn't need to be defined.

~~Certificate of Compliance: A document used in the I/M Program to certify that a vehicle meets all applicable requirements of the program. Proof that a vehicle meets all applicable requirements of the I/M Program. This proof may be sent in an electronic format to the Utah State Tax Commission.~~

Commented [JG6]: We are working with DMV to utilize electronic certificates instead of paper certificates. This definition better reflects that.

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Certificate of Waiver: A document used to verify that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met.

Commented [JG7]: This term has been changed to "Waiver".

Certification: Assurance by an authorized source, whether it be a laboratory, the manufacturer, the State, or the Department, that a specific product or statement is in fact true and meets all required requirements.

Certified Emissions Inspector: A person who has successfully completed all certification requirements and has been issued a current, valid Certified Emissions Inspector Certification by the Department.

Certified Testing Equipment: An official test instrument that has been approved by the Department to test motor vehicles for compliance with this Regulation; this includes the Analyzer as well as the OBD testing portion of the machine.

CO: Carbon monoxide.

Commented [JG8]: This term is no longer necessary with the removal of TSI requirements.

Compliance: Verification that certain submission data and hardware submitted by a manufacturer for accreditation consideration, meets all required accreditation requirements.

Compliance Assurance Inspection: An enhanced emissions inspection performed at the I/M Technical Center.

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Compliance Assurance List: A list created and maintained by the Department that identifies vehicles for Compliance Assurance Inspections. Vehicles placed on this list shall be inspected at the I/M Technical Center.

Contractor: The emission inspection system contractor selected by the Department to provide specialized services related to the I/M Program in Cache County.

Council: See Cache County Council.

County: Cache County, Utah.

Custom Vehicle: A motor vehicle that meets the requirements of Section 41-6a-1507, Utah Code Annotated, 1953 as amended.

Commented [JG9]: This term is defined in Utah Code.

Cutpoints: The maximum allowable concentration of carbon monoxide (CO) and hydrocarbons (HC) for a given weight class and model year of a motor vehicle, as provided by this Regulation, using an approved infrared Exhaust Emissions Gas Analyzer.

Commented [JG10]: This term is no longer necessary with the removal of TSI requirements.

Department: The Bear River Health Department.;

Director: The Director of the Bear River Health Department or his authorized representative.;

DLC: Data Link Connector used in OBD applications is a 16 pin connector used by scan tools and other emission diagnostic equipment to communicate with the vehicle's computer for the purpose of collecting emissions related data.;

DTC: Diagnostic Trouble Code is a standardized 5 digit code that is used to identify a specific fault that has occurred or is occurring in a vehicle.;

Dual Fuel Vehicle: See Flexible Fuel Vehicle.;

~~EGR System: The Exhaust Gas Recirculation System—An emissions control system that recycles or recirculates a portion of the exhaust gases back to the engine combustion chambers.;~~

Commented [JG11]: This term is not addressed in the regulation and doesn't need to be defined.

Emissions Control Systems: Parts, assemblies or systems originally installed by the manufacturer in or on a vehicle for the sole or primary purpose of reducing emissions.;

EPA: The United States Environmental Protection Agency.

~~Exhaust Emissions Gas Analyzer: An instrument that is capable of measuring the concentrations of certain air contaminants in the exhaust gas emanating from a motor vehicle which is approved by the Department for this use in accordance with this Regulation as an official test instrument.;~~

Commented [JG12]: This term is no longer necessary with the removal of TSI requirements.

~~Evaporative Control System: An emissions control system that prevents the escape of fuel vapors from the fuel tank or air cleaner and stores them in a charcoal canister to be burned in the combustion chamber.;~~

Commented [JG13]: This term is not addressed in the regulation and doesn't need to be defined.

Flexible Fuel Vehicle: Also called Flex-Fuel Vehicle. A vehicle that is designed to run on more than one fuel, usually gasoline blended with ethanol (0-85%), and both fuels are stored in the same common tank.;

~~Gas Calibration Check: A procedure using known concentrations of HC and CO calibration gases to verify the accuracy of an Analyzer in measuring HC and CO.;~~

Commented [JG14]: This term is no longer necessary with the removal of TSI requirements.

~~HC: Hydrocarbons.;~~

Commented [JG15]: This term is no longer necessary with the removal of TSI requirements.

Idle: A condition where the vehicle engine is warm and running at the rate specified by the manufacturer's curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position. This

condition must be achieved without placing a load on the vehicle to decrease the RPM to the specified rate;

Commented [JG16]: This term is no longer necessary with the removal of TSI requirements.

I/M Program: See Vehicle Emissions Inspection and Maintenance Program;

I/M Program Station: A stationary Vehicle Emissions Inspection and Maintenance Station that qualifies and has a valid permit, issued by the Department, to operate as an emissions inspection and maintenance station in the I/M Program;

I/M Technical Center: A facility operated by the Department for technical or administrative support of the I/M Program.

Inspection: An official vehicle emissions test performed for the purpose of issuing a Certificate of Compliance or ~~Certificate of Waiver~~;

Inspector: A Certified Emissions Inspector;

MIL: Malfunction Indicator Light is an indicator located on the instrument panel that notifies the operator of an emissions fault;

Motor Vehicle: A self-propelled motorized vehicle with an internal combustion powered engine which is licensed for operation on public roads and/or streets. Motor Vehicles exempted from the inspection requirements of this Regulation are listed in Section 6.4 of this Regulation;

Non-certified Inspector: Any person who has not been certified by the Department to perform official emissions tests;

OBD: On Board Diagnostic refers to a vehicle's monitoring and diagnostic capabilities of its emissions systems;

~~PCV System: Positive Crankcase Ventilation System—an emissions control system which returns crankcase vapors and blowby gases to the combustion chamber to be burned;~~

Commented [JG17]: This term is not addressed in the regulation and doesn't need to be defined.

~~Primary Residence: Is the place where an individual intends to permanently reside, maintains a permanent residence more than six (6) months during a calendar year, or where an individual lives more than six (6) months during a calendar year;~~

Commented [JG18]: This term is being removed from the regulation. See Section 6.0 for more details.

Publicly-owned Vehicles: A motor vehicle owned by a government entity, including but not limited to the federal government or any agency thereof, the State of Utah or any agency or political subdivision thereof;

Readiness: Readiness is used to identify the state of a vehicle's emissions monitors as they are tested. Readiness does not indicate whether the monitors passed or failed the test, it only indicates whether or not the test has been run for any particular monitor.;

Referee Inspection: An emissions inspection performed at the I/M Technical Center for the purpose of resolving disputes or overriding inspection criteria for cause.

Regulation: A regulation of the Bear River Health Department for a vehicle emissions inspection and maintenance program.

Rejection: A condition where a vehicle subject to an OBD inspection has not met the Readiness requirements as set forth by this Regulation. The vehicle has not failed the inspection but it must be driven additional miles until Readiness monitors are set "ready" or repairs have been made allowing readiness flags to set ready.;

Station: An I/M Program Station.;

Technical Bulletin: A document issued to Certified Emissions Inspectors and/or I/M Program Stations by the Department to update, clarify or establish policies and/or procedures for their implementation in the I/M Program;

Training Program: A formal program administered, conducted, or approved by the Department for the education of emission inspectors in basic emission control technology, inspection procedures, diagnosis and repair of emissions related problems, I/M Program policies, procedures, and this Regulation.;

Two-Speed Idle: A condition where the vehicle engine is warm and running at a high speed rate of 2200-2800 RPMs and then a low rate of 350-1200 RPMs.;

Commented [JG19]: This term is no longer necessary with the removal of TSI requirements.

Vehicle Emission Control Information Label (VECI Label): An EPA required label found on a vehicle that contains the manufacturer's name and trademark, and an unconditional statement of compliance with EPA emission regulations. The label often contains a list of emissions control devices found on the vehicle.

Vehicle Emissions Inspection and Maintenance Program: The program established by the Department pursuant to Section 41-6a-1642 Utah Code Annotated, 1953, as amended, and Cache County Code Chapter 10.20 Ordinance 2013-04.;

Vintage Vehicle: A motor vehicle that meets the requirements of Section 41-21-1 Utah Code Annotated, 1953 as amended.;

Commented [JG20]: This term is defined in Utah Code.

Waiver: Proof that a vehicle has met the repair or adjustment requirements of the I/M Program Rules and Regulations even though specific emission standards have not been met.

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2.0 PURPOSE

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It is the purpose of this Regulation to reduce air pollution levels in Cache County by requiring inspections of in-use motor vehicles and by requiring emission related repairs and/or adjustments for those vehicles that fail to meet the prescribed standards so as to:

- 2.1 Protect and promote the public health, safety, and welfare;
- 2.2 Improve air quality;
- 2.3 ~~Meet or exceed the minimum design and performance requirements for~~ Comply with the federal requirements for I/M Programs as defined in 40 CFR Part 51, Subpart S;
- 2.4 Comply with the law enacted by the Legislature of the State of Utah, Sections 41-6a-1642 Utah Code Annotated, 1953, as amended; and
- 2.5 Comply with Cache County Code Chapter 10.20, Vehicle Emissions and Maintenance Program, as amended Ordinance 2013-04.

3.0 AUTHORITY AND JURISDICTION OF THE DEPARTMENT

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3.1 Under Chapter 10.20.020(C) of Cache County Code ~~Section 2.3 of Cache County Ordinance 2013-04~~, the Cache County Council (hereafter, Council) delegates its authority as an administrative body under Section 41-6a-1642, Utah Code Annotated, 1953, as amended, to the Bear River Board of Health (hereafter Board), to address all issues pertaining to the adoption and administration of the Vehicle Emissions Inspection and Maintenance Program (hereafter I/M Program).

3.2 Under Chapter 10.20.020(D) of Cache County Code ~~Section 2.4 of Cache County Ordinance 2013-04~~, the Council directs the Board to adopt and promulgate rules regulations to ensure compliance with State Implementation Plan requirements with respect to an I/M Program.

3.3 The Board is authorized to make standards and regulations pursuant to Section 26A-1-121(1) of the Utah Code Annotated, 1953, as amended.

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3.4 The Board is authorized to establish and collect fees pursuant to Section 26A-1-114(1)(h)(i) of the Utah Code Annotated, 1953, as amended.

3.5 All aspects of the I/M Program within Cache County enumerated in Section 2.0 of this Regulation shall be subject to the direction and control of the Bear River Health Department (hereafter Department).

4.0 POWERS AND DUTIES

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4.1 The Department shall be responsible for the enforcement and administration of this Regulation and any other powers vested in it by law and shall:

4.1.1 Make policies and procedures necessary to ensure that the provisions of this Regulation are met and that the purposes of this Regulation are accomplished;

4.1.2 Require the submission of information, reports, plans, and specifications from I/M Program Stations as necessary to implement the provisions, requirements, and standards of this Regulation;

4.1.3 Issue permits, certifications, and charge fees as necessary to implement the provisions, requirements, and standards of this Regulation; and

4.1.4 Perform audits of any I/M Program Station, issue orders and/or notices, hold hearings, and levy administrative penalties, as necessary to effect the purposes of this Regulation.

4.2 The Department may suspend, revoke, or deny a permit, subject to the Penalty Schedule in Appendix C, of an I/M Program Station and/or require the surrender of the permit of such I/M Program Station upon showing that:

4.2.1 A vehicle was inspected and issued a Certificate of Compliance by the station personnel that did not, at the time of inspection, comply with all applicable policies, procedures, ~~Technical Bulletins~~, and this Regulation;

Commented [JG21]: BRHD does not issue Technical Bulletins.

4.2.2 A vehicle was inspected and ~~rejected~~ ~~failed~~ by the I/M Program Station when, in fact, the vehicle was determined by the Department to be in such condition that it did comply with the requirements of this Regulation;

~~4.2.3 The I/M Program Station is not open and available to perform inspections during a major portion of the normal business hours of 8:00 AM to 5:00 PM Mondays through Fridays (except I/M Program Stations which only test their own vehicles);~~

Commented [JG22]: This statement limits stations that operate outside of normal business hours. Our testing technology allows us to collect required information 24 hours a day and a set schedule for operating hours does not affect the validity of an emissions inspection.

4.2.43 The I/M Program Station has violated any provisions of this Regulation, or any Rule, Regulation, or Department policy properly promulgated for the operation of an I/M Program Station;

4.2.5 The I/M Program Station was not equipped as required by Section 7.0 of this Regulation;

4.2.64 The I/M Program Station is not operating from a location specified on the permit;

4.2.75 An official inspection was done by a Non-certified Inspector or a Non-certified Inspector has gained access to the official testing portion of the Certified Testing Equipment test equipment or a non-certified inspector signed a Certificate of Compliance;

Commented [JG23]: We are working with DMV to produce electronic certificates that won't need to be signed by the inspector.

4.2.86 The Certified Emissions Inspector logged in to the official testing portion of the Certified Testing Equipment test equipment did not perform the inspection;

4.2.97 The Certified Testing Equipment computerized test equipment has been tampered with or altered in any way contrary to the certification and maintenance requirements of the Certified Testing Equipment test equipment;

4.2.108 The I/M Program Station denies access to a representative of the Department to conduct an audit or other necessary business during regular business hours;

4.2.11 The I/M fee signage procedures are not followed as specified in Section 6.6; or

Commented [JG24]: We don't need to penalize a station because they don't have a fee sign posted. The fee is capped at \$15/\$20 for an inspection.

4.2.122 The I/M fee has been determined by the Department to be discriminatory in that different fees are assessed dependent upon vehicle ownership, vehicle make or model, owner residence, etc; or;

4.2.130 The I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.3 The Department may suspend, revoke, or deny the certificate of a Certified Emissions Inspector, subject to the Penalty Schedule in Appendix C, and require the surrender of this certificate upon showing that:

4.3.1 The Certified Emissions Inspector caused a Certificate of Compliance to be issued without an approved inspection being made;

4.3.2 The Certified Emissions Inspector denied the issuance of a Certificate of Compliance to a vehicle that, at the time of inspection, complied with the law for issuance of said certificate;

4.3.3 The Certified Emissions Inspector issued a Certificate of Compliance to a vehicle that, at the time of issuance, was in such a condition that it did not comply with this Regulation;

4.3.4 Inspections were performed by the Certified Emissions Inspector, but not in accordance with applicable policies, procedures, ~~Technical Bulletins~~, and this Regulation;

4.3.5 The Certified Emissions Inspector allowed a ~~Non-certified~~ Inspector to perform an official ~~Inspection~~ I/M test or gain access to the official testing portion of the ~~Certified Testing Equipment~~ test equipment;

4.3.6 The Certified Emissions Inspector logged in to the official testing portion of the ~~Certified Testing Equipment~~ test equipment did not perform the inspection;

4.3.7 The Certified Emissions Inspector signed an inspection form or certificate stating that he had performed the emissions test when, in fact, he did not; or

4.3.8 The Certified Emissions Inspector employed at an I/M Program Station that also contracts with the State of Utah as an On the Spot Station renewed a vehicle registration without a valid Certificate of Compliance for that vehicle. This is considered an intentional pass.

4.4 The Department shall respond, according to the policies and procedures of the Department, to public complaints regarding the fairness and integrity of the inspections they receive and shall provide a method that inspection results may be challenged if there is a reason to believe them to be inaccurate.

Commented [JG25]: We are working with DMV to produce electronic certificates that won't be signed by the inspector.

5.0 SCOPE

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It shall be unlawful for any person to fail to comply with any policy, procedure, ~~Technical Bulletin~~, or regulation promulgated by the Department, unless expressly waived by this Regulation.

6.0 GENERAL PROVISIONS

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Subject to the exceptions in Section 6.4 and pursuant to the schedule in Section 6.1, ~~individuals with their primary residence in Cache County must register their motor vehicles in Cache County and motor vehicles (of model years 1969 and newer) that are or~~

Commented [JG26]: It is not within our jurisdiction to enforce registration requirements. This is a DMV function. We simply enforce the requirement of vehicles registered in Cache County to comply with the emissions regulation. This language matches language found in 41-6a-1642(1).

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will be registered in Cache County, or principally operated from a facility within Cache County shall be subject to an emission inspection performed by an I/M Program Station or other entity approved by the Director. Owners of vehicles that meet the requirements of Section 6.2 or 6.3 shall comply with the inspection requirements regardless of the county of registration.

Commented [J627]: Redundant language.

6.1 ~~Beginning January 1, 2014, n~~Motor vehicles are subject to a biennial emissions inspection. Emissions inspections will be required in odd-numbered years for a vehicle with an odd-numbered model year. Emissions inspections will be required in even-numbered years for a vehicle with an even-numbered model year.

6.1.1 A Certificate of Compliance, ~~Certificate of Waiver,~~ or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in odd-numbered years for a vehicle with an odd-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.2 A Certificate of Compliance, ~~Certificate of Waiver,~~ or evidence that the motor vehicle is exempt from the I/M Program requirements (as defined in Section 6.4) shall be presented to the Cache County Assessor or the Utah State Tax Commission as conditions precedent to registration or renewal of registration of a motor vehicle in even-numbered years for a vehicle with an even-numbered model year. Persons who register a vehicle without meeting the requirements listed may be subject to the penalties referenced in Section 154 of this Regulation.

6.1.3 The Air Pollution Control Fee shall be paid annually, as per Chapter 10.20.040(E) of Cache County Code ~~Section 4.5 of Cache County Ordinance 2013-04,~~ (see also Section 6.7 of this Regulation) as conditions precedent to registration or renewal of registration of a motor vehicle.

6.1.4 A Certificate of Compliance shall be valid for a period of time in accordance with Section 41-6a-1642(10) ~~41-1a-205~~ Utah Code Annotated, 1953, as amended.

6.2 Publicly-Owned Vehicles. Owners of publicly-owned vehicles shall comply with the inspection program requirements. Federally-owned vehicles and vehicles of employees operated on a federal installation that do not require registration in the State of Utah shall comply with the emissions testing requirements.

6.3 Vehicles of employees and/or students parked at a college or university that do not require registration in Cache County shall comply with the emissions testing requirements as authorized by 41-6a-1642(5)(a) Utah Code Annotated, 1953, as amended.

6.3.1 College or university parking areas that are metered or for which payment is required per use are not subject to the requirements in Section 6.3.

6.4 Vehicle Exemption. The following vehicles are exempt from these emissions testing requirements:

Commented [JG28]: This section has been cleaned up to reflect the removal of TSI inspections. I have also cleaned up some language and renumbered.

~~6.4.1 Any vehicle of model year 1968 or older;~~

~~6.4.2 All agricultural implements of husbandry and any motor vehicle that qualifies for an exemption as provided by 41-6a-1642(3) and 41-6a-1642(4) Utah Code Annotated, 1953, as amended;~~

~~6.4.1 An implement of husbandry as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.2 A motor vehicle that meets the definition of a farm truck as provided in Section 41-1a-102 Utah Code Annotated, 1953, as amended, and has a gross vehicle weight rating of 12,001 pounds or more;~~

~~6.4.3 A vintage vehicle as defined in Section 41-21-1 Utah Code Annotated, 1953, as amended;~~

~~6.4.4 A custom vehicle as defined in Section 41-6a-1507 Utah Code Annotated, 1953, as amended;~~

~~6.4.5 A pickup truck, as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended, with a gross vehicle weight rating of 12,000 pounds or less that meets the requirements provided in Section 41-6a-1642(4)(f) Utah Code Annotated, 1953, as amended;~~

~~6.4.6 A motorcycle as defined in Section 41-1a-102 Utah Code Annotated, 1953, as amended;~~

~~6.4.7 A motor vehicle powered solely by electric power;~~

~~6.4.8 Any gasoline or non-diesel based Alternative Fuel powered vehicle of model year 1995 or older;~~

~~6.4.9 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 8,500 pounds, and of model year 2007 or older;~~

~~6.4.10 Any gasoline or non-diesel based Alternative Fuel powered vehicle, with a gross vehicle weight rating greater than 14,000 pounds, and of model year 2008 or newer;~~

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~~6.4.3 Any vehicle used for maintenance or construction and not designed or licensed to operate on the highway;~~

~~6.4.4 Any motorcycle or motor-driven cycle (including vehicles which operate with an engine normally used in a motorcycle);~~

~~6.4.5 Any vehicle that operates exclusively on electricity;~~

~~6.4.6 Any motor vehicle which qualifies for legislative exemptions;~~

~~6.4.7 Tactical military vehicles;~~

~~6.4.8 Any vintage vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;~~

~~6.4.9 Any custom vehicle as provided by 41-6a-1642(3) Utah Code Annotated, 1953, as amended;~~

~~6.4.101 Any vehicle that is less than six years old on January 1 based on the age of the vehicle as determined by the model year identified by the manufacturer;~~

~~6.4.112 Any diesel or diesel based Alternative Fuel powered vehicle 1997 and older; and~~

~~6.4.123 Any diesel or diesel based Alternative Fuel powered vehicle with a GVWR- gross vehicle weight rating greater than 14,000-lbs- pounds; and~~

~~6.4.14 Any vehicle that qualifies for exemption under Section 41-6a-1642 Utah Code Annotated, 1953, as amended, or the Federal Clean Air Act.~~

~~6.5 If a vehicle exempted by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official inspection it shall be the responsibility of the Certified Emissions Inspector to inform the owner/operator of the vehicle that the vehicle is not required to have an official inspection. It shall be the responsibility of the Certified Emissions Inspector if a vehicle exempted from this Regulation by Section 6.4 of this Regulation is brought to the Certified Emissions Inspector for an official emission test to inform the owner/operator of the vehicle that the vehicle is not required to have an official emission inspection for vehicle registration purposes.~~

6.6 Official Signs.

~~6.6.1 All I/M Program Stations, except those stations authorized to inspect only their own motor vehicles as a fleet inspection station, shall display in a conspicuous location on the premises an official sign provided and approved by the Department;~~

Commented [JG29]: All I/M stations should post their official sign.

~~6.6.2 The emission culpoints, as referenced in Appendix B shall be posted in a conspicuous place on the station's premises;~~

Commented [JG30]: This sign is no longer necessary due to TSI removal.

6.6.32 The readiness requirements for an OBD test as referenced in Appendix D shall be posted in a conspicuous place on the station's premises;

6.6.43 The station shall post on a clear and legible sign and in a conspicuous place at the station, the fees charged by that station for the performance of the emissions inspection;

6.6.54 The free re-inspection policy as referenced in Section 9.46 shall be posted in a conspicuous place on the station's premises;

6.6.65 The signs required by Sections 6.6.1 through 6.6.54 shall be located so as to be easily in the public view.

6.7 Fees.

6.7.1 The fees assessed upon I/M Program Stations and Certified Emissions Inspectors shall be determined according to a fee schedule adopted by the Board. The fee schedule is referenced in Appendix A to this Regulation and may be amended by the Board as necessary.

6.7.2 An Air Pollution Control Fee is hereby assessed upon every motor vehicle registered in Cache County as per Chapter 10.20.040 of Cache County Code Section 4.5 of Cache County Ordinance 2013-04. The fee will be assessed annually at the time of registration of the vehicle.

6.7.2.1 This fee assessment is included upon all motorized vehicles including those that are exempted from the inspection requirements of this Regulation by Section 6.4 ~~unless a separate fee is assessed on other motor vehicles by other Board of Health Regulations.~~

Commented [JG31]: This language is not necessary.

6.7.2.2 A motor vehicle that is exempt from the registration fee, and a commercial vehicle with an apportioned registration shall be exempt from this fee as per Section 41-1a-1223, Utah Code Annotated, 1953, as amended and Chapter 10.20.040 of Cache County Code Section 4.5.2 of Cache County Ordinance 2013-04.

6.7.3 I/M Program Stations may charge a fee for the required service. The fee may not exceed, for each vehicle inspected, the amount set by the Board and referenced in Appendix A of this Regulation.

6.7.3.1 The inspection fee pays for a complete inspection leading to a Certificate of Compliance, a Rejection, or a failure. If a vehicle fails, or is rejected from an inspection, the owner/operator is entitled to one free re-inspection if he returns to the I/M Program Station that performed the original inspection within fifteen (15) calendar days from the date of the initial inspection. The I/M Program Station shall extend the fifteen day free re-inspection to accommodate the vehicle owner/operator if the I/M Program Station is unable to schedule the retest of the vehicle within the fifteen day time period. The inspection fee shall be the same whether the vehicle passes or fails the emission test.

~~6.7.3.2 At the request of the Department, an I/M Program Station shall extend the free retest time for vehicle owners/operators who are unable to complete repairs because of the unavailability of parts to make the necessary repairs.~~

Commented [JG32]: This language is not necessary and doesn't change the way the program operates. In the 7 years we have been running an I/M program we have never requested that a station extend the free re-test period.

6.7.4 If a vehicle fails the inspection and is within the time and mileage requirements of the federal emissions warranty contained in section 207 of the Federal Clean Air Act, the Certified Emissions Inspector shall inform the owner/operator that he may qualify for warranty coverage of emission related repairs as provided by the vehicle manufacturer and mandated by the Federal Environmental Protection Agency (see 40 CFR Part 85, Subpart V).

6.8 Compliance Assurance List.

6.8.1 The Department shall create and maintain a list of vehicles that are subject to a Compliance Assurance Inspection at the I/M Technical Center.

Commented [JG33]: The Department needs to ability to recall vehicles that are suspected of fraud or tampering. This is a great opportunity to enhance our OBD inspection and further verify that vehicles are meeting emissions requirements. This is a great strength to the program and it goes hand in hand with our ability to request vehicle registration revocations from DMV.

6.8.1.1 The Compliance Assurance Inspection criteria listed in Appendix D, Test Procedures, shall be followed.

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6.8.1.2 A vehicle that passes the Compliance Assurance Inspection may be removed from the Compliance Assurance List by Department personnel.

6.8.1.3 A vehicle that fails the Compliance Assurance Inspection may be subject to penalties as described in Section 14 of this regulation.

6.8.2 The Department reserves the right to recall a vehicle and perform a Compliance Assurance Inspection at the I/M Technical Center for the following reasons:

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6.8.2.1 Suspected fraudulent registration;

6.8.2.2 Suspected fraudulent emissions inspection;

6.8.2.3 Suspected tampering of emissions control devices;

6.8.2.4 Violations of Section 41-6a-1626, Utah Code Annotated, 1953, as amended, regarding visible emissions; and

6.8.2.5 Any item listed in Appendix D, Test Procedures, that cause the vehicle to be flagged during an emissions inspection.

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7.0 PERMIT REQUIREMENTS OF THE VEHICLE EMISSIONS I/M PROGRAM STATION

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7.1 Permit Required.

7.1.1 No person shall in any way represent any place as an official I/M Program Station unless the station is operated under a valid permit issued by the Department.

7.1.2 The Department is authorized to issue or deny permits for I/M Program Stations.

7.1.3 No permit for any official I/M Program Station may be assigned, transferred, or used by any person other than the original owner identified on the permit application for that specific I/M Program Station.

7.1.4 The permit shall be posted in a conspicuous place within public view on the premises.

7.1.5 Application for an I/M Program Station permit shall be made to the Department upon a form provided by the Department. No permit shall be issued unless the Department finds that the facilities, tools, and equipment of the applicant comply with the requirements of this Regulation and that competent personnel, certified under the provisions of Section 8.0, are employed and will be available to make inspections, and the operation thereof will be properly conducted in accordance with this Regulation.

7.1.5.1 An I/M Program Station shall notify the Department and cease any emission testing if the station does not have a Certified Emissions Inspector employed.

7.1.5.2 An I/M Program Station shall notify the Department upon termination and/or resignation of any Certified Emissions Inspector employed by the station.

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7.1.5.3 An I/M Program Station shall comply with all the terms stated in the permit application and all the requirements of this Regulation;

~~7.1.5.4 As a condition for permitting test and repair I/M Program Stations, the station will keep and maintain all necessary tools and resources needed to effectively repair vehicles that fail an emissions test;~~

~~7.1.5.5 As a condition for permitting test only I/M Program Stations, the station will notify the vehicle owner/operator that the facility is a test only facility and will not provide repairs prior to any official emissions test;~~

~~7.1.5.6 An I/M Program Station shall have a building with a suitable exhaust extraction system; and~~

7.1.5.7 An I/M Program Station shall provide a dedicated internet connection for the Certified Testing Equipment. A wireless internet connection may be required by the Contractor.

Commented [JG34]: We don't have a reason to permit "Test and Repair" and "Test Only" stations. We are permitting "I/M Program Stations." They all function the same according to our regulation. Even with the current wording the stations were treated the same and had no different requirements.

Commented [JG35]: This was important for TSI inspections but it isn't necessary for us to dictate this for OBD inspections. Stations should take these steps as a good business practice, not a requirement to perform an OBD inspection.

7.2 Permit Duration and Renewal

7.2.1 The permit for I/M Program Stations shall be issued annually and shall expire on the last day of the month, one year from the month of issue. The permit shall be renewable sixty days prior to the date of expiration.

7.2.2 It is the responsibility of the owner/operator of the I/M Program Station to pursue the permit renewal through appropriate channels.

7.3 I/M Program Station to hold Department Harmless

7.3.1 In making application for a permit or for its renewal, such action shall constitute a declaration by the applicant that the Department shall be held harmless from liability incurred due to action or inaction of I/M Program Station's owners or their employees.

7.4 An I/M Program Station shall be kept in good repair and in a safe condition for inspection purposes free of obstructions and hazards.

8.0 TRAINING AND CERTIFICATION OF INSPECTORS

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8.1 Certified Emissions Inspector Certification Required.

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8.1.1 No person shall perform any part of the inspection for the issuance of a Certificate of Compliance unless the person possesses a valid Certified Emissions Inspector Certification issued by the Department.

8.1.2 Applications for a Certified Emissions Inspector Certification shall be made upon an application form prescribed by the Department. No certification shall be issued unless:

8.1.2.1 The applicant has shown adequate competence by successfully completing the written and practical all portions of the Certified Emissions Inspector Certification requirements as specified in this Regulation; and

8.1.2.2 The applicant has paid the required permit fees as set by the Board and referenced in Appendix A of this Regulation.

8.1.3 An applicant shall comply with all of the terms stated in the application and with all the requirements of this Regulation.

8.1.4 An applicant shall complete a Department approved training course and shall demonstrate knowledge and skill in the performance of emission testing and use of the Certified Testing Equipment test equipment. Such knowledge and skill shall be shown by passing at minimum:

8.1.4.1 Operation and purposes of emission control systems;

8.1.4.2 Inspection procedures as outlined in this Regulation and prompted by the Certified Testing Equipment test equipment;

8.1.4.3 Operation of the Certified Testing Equipment including the performance of gas calibration and leak check;

Commented [JG36]: This language is not necessary with the removal of TSI inspections.

8.1.4.4 The provisions of Section 207(b) warranty provisions of the Federal Clean Air Act, and other federal warranties;

8.1.4.5 The provisions of this Regulation and other applicable Department policies and procedures; and

8.1.4.6 A performance qualification test including but not limited to the following:

(a) Demonstration of skill in proper use, care, and maintenance, calibration, and leak testing of the Certified Testing Equipment;

Commented [JG37]: This language is not necessary with the removal of TSI inspections.

[PAGE * MERGEFORMAT]

(b) Demonstration of ability to conduct the inspection; and

(c) Demonstration of ability to accurately enter data in the Certified Testing Equipment test equipment.

~~8.1.5 A signed hands-on performance check sheet shall be necessary for successful completion of the performance qualification test. The hands-on performance check sheet shall be signed by an instructor or other equally qualified person approved by the Department.~~

Commented [JG38]: This language was originally put in place to allow for outside companies to provide inspector training. All training is done in-house at BRHD and we validate the training. We do not need this check sheet.

8.1.65 The Department shall issue a Certified Emissions Inspector Certificate to an applicant upon successful completion of the requirements of this section.

8.1.76 The Certified Emissions Inspector Certificates are and remain the property of the Department, only their use and the license they represent is tendered.

8.1.87 Certified Emissions Inspector Certifications shall not be transferred from one person to another person.

8.2 Recertification Requirements for Certified Emissions Inspectors

8.2.1 The Department may renew certifications for an existing Certified Emissions Inspector after a properly completed renewal form is submitted, reviewed, and approved, the recertification requirements have been completed, the fees are paid and the Certified Emissions Inspector has complied with this Regulation.

8.2.2 Certified Emissions Inspectors shall be required to recertify annually. Failure to recertify shall result in suspension or revocation of the Certification as described in this Regulation.

8.2.3 Certified Emissions Inspectors shall complete a Department approved refresher course every 2 years. Applicants for recertification shall complete a Department approved refresher course no more than sixty days prior to the date of expiration. ~~Applicants shall demonstrate knowledge and skill in the performance of emission testing and use of the test equipment.~~

Commented [JG39]: This is refresher training. The inspectors are capable of using the equipment at this point.

8.3 Certification Expiration

8.3.1 The Certified Emissions Inspector Certification shall be issued annually and shall expire on the last day of the month one year from the month of issue. The certification shall be renewable sixty days prior to the date of expiration.

8.3.2 It is the responsibility of the Certified Emissions Inspector to pursue the renewal of the Certification.

8.4 Certified Emissions Inspector Certification Denial, Suspension and Revocation

8.4.1 Certified Emissions Inspector Certifications may be suspended or revoked by the Department for violations of this Regulation.

8.4.2 Suspension or revocation of Certified Emissions Inspector Certifications shall follow the provisions of Appendix C of this Regulation.

8.4.3 The Department may deny issuance of a Certified Emissions Inspector Certification to an individual that works as an emissions inspector in another county in Utah and is currently under suspension or revocation in that program.

9.0 INSPECTION PROCEDURE

9.1 The official emissions inspection shall be solely performed by a Certified Emissions Inspector at an I/M Program Station, and Department approved inspection procedures are to be followed.

9.2 ~~The Certified Emissions Inspector shall verify the vehicle license plate and vehicle identification numbers by comparing the information on the vehicle's registration with those on the vehicle and shall accurately record them on the inspection test equipment.~~

9.2.1 ~~The Certified Emissions Inspector shall verify the owner's name and address and enter this information into the test equipment.~~

9.2.2 ~~The Certified Emissions Inspector shall enter completely and accurately all the information required as part of the data entry procedure for the official vehicle emissions test on the approved test equipment.~~

9.32 A complete official test must be performed any time an inspection is requested. The Certified Emissions Inspector shall not ~~Do not~~ perform any part of the inspection without initiating an official test on the Certified Testing Equipment test equipment.

9.43 The Certified Emissions Inspector shall perform the official vehicle emissions test using the proper testing procedure.;

9.43.1 All gasoline, and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 and newer, with a GVWR gross vehicle weight rating 8,500 ~~lbs~~ pounds or less, shall be tested as specified in

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Commented [JG40]: Test procedures are documented in Appendix D.

Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.4.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1969 to 1995 shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.

9.4.3 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 1996 to 2007 with a GVWR greater than 8,500 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.

9.4.4.2 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR gross vehicle weight rating greater than 8,500 lbs pounds and less than 14,001 lbs pounds shall be tested as specified in Appendix D, OBDII Test Procedures, unless specifically exempted by this Regulation.

9.4.5 All gasoline and non-diesel based Alternative Fuel powered vehicles, including Bi-Fuel vehicles, model year 2008 and newer with a GVWR greater than 14,000 lbs shall be tested as specified in Appendix D, Two-Speed Idle Test Procedures, unless specifically exempted by this Regulation.

9.4.6.3 All diesel and diesel based Alternative Fuel powered vehicles model year 1998 and newer with a GVWR gross vehicle weight rating less than 14,001 lbs pounds shall be tested as specified in Appendix D, Diesel Test Procedures, unless specifically exempted by this Regulation.

9.5.4 Retesting Procedures

9.5.4.1 If the vehicle fails the initial emissions inspection, the owner/operator shall have fifteen calendar days in which to have repairs or adjustments made and return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. In order to be in compliance, the vehicle that failed the initial test shall meet the following conditions:

9.5.4.1.1 The vehicle is re-tested; and

9.5.4.1.2 The vehicle meets the requirements as specified in Appendix D.

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Commented [JG41]: This language is redundant.

9.5.4.2 If the vehicle is Rejected from the initial emissions inspection for failure to complete Readiness requirements, the owner/operator shall have fifteen calendar days in which to return the vehicle to the I/M Program Station that performed the initial inspection for one (1) free re-inspection. In order to be in

compliance, the vehicle that was Rejected from the initial test shall meet the following conditions:

~~9.5.2.1~~ The vehicle is re-tested; and

~~9.5.2.2~~ The vehicle meets the requirements as specified in Appendix D.

Commented [JG42]: This language is redundant.

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9.4.3 If the vehicle owner/operator does not return to the I/M Program Station that performed the initial inspection within fifteen calendar days the I/M Program Station is under no obligation to offer a free re-inspection.

9.65 Certificate of Waivers

9.6.1 A Certificate of Waiver may be issued for 1969 to 1995 model year vehicles if all of the following requirements are met:

~~9.6.1.1~~ Air pollution control devices identified in the emission decal are in place and operable on the vehicle. If the decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. The gas tank cap shall be in place. If the devices have been removed or rendered inoperable, they shall be replaced or repaired before a Certificate of Waiver is granted.

~~9.6.1.2~~ The vehicle continues to exceed applicable cutpoint standards after \$200.00 of acceptable emissions related repairs have been performed. Proof of repair costs shall be provided for the vehicle to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made by someone with ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00.

9.6.25.1 A Certificate of Waiver may be granted and a Certificate of Compliance issued for 1996 and newer model year vehicles if all of the following requirements are met:

~~9.6.2-15.1.1~~ Air pollution control devices identified in the VECI Label emission decal are in place and apparently operable on the vehicle. If the VECI Label decal is missing, the Department may use reference material to identify the air pollution control devices required for the vehicle. If the devices have been removed or rendered inoperable, they

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shall be replaced or repaired before a Certificate of Waiver is granted;

9.6.2.25.1.2 ~~The vehicle continues to exceed applicable cutpoint standards after \$200.00 of acceptable emissions related repairs have been performed, if the vehicle is subject to a Two-Speed Idle Inspection. If the vehicle is subject to an OBD Inspection, the~~ The vehicle continues to fail the inspection after \$200.00 has been spent on acceptable emissions related repair costs for that specific vehicle, and if proof of repair costs for that specific vehicle have been provided to the Department in the form of an itemized bill, invoice, work order, manifest, or statement in which emissions related parts are specifically identified. If repairs are made by someone at a repair station that employs individuals with current ASE L1, ASE A8, or another certification approved by the Department, the cost of labor may be included in the \$200.00;

9.6.2.35.1.3 The vehicle is not within the time and mileage requirements of the federal emissions warranties. Any vehicle that is within time and mileage requirements of the federal emissions warranties shall not be eligible for an emissions repair, a wWaiver, but shall be repaired to pass the testing requirements; and

9.6.2.45.1.4 A vehicle that is rRejected from the OBD Inspection may qualify for a wWaiver if it meets requirements set forth in Appendix F, Waivers for "Not Ready" Vehicles.

9.6.35.2 As used in Sections 9.6.1, and 9.6.2 9.5.1, acceptable emissions related repairs:

9.6.3.1 ~~Refers to those expenditures and costs associated with the adjustment, maintenance, and repair of the motor vehicle which are directly related to reduction of exhaust emissions necessary to comply with the applicable emissions standards, and procedures, and/or repairs to the evaporation vapor recovery system;~~

9.6.3.25.2.1 May include adjustments, maintenance, or repairs performed up to 60 days prior to the official emissions test, provided appropriate documentation is supplied to the Department;

Commented [JG43]: This section was necessary for TSI repair work. OBD repairs are more closely tied to DTCs. This is addressed further.

Diagnostic work performed, including Diagnostic Trouble Codes if applicable, must be properly documented to justify any repairs performed;

~~9.6.3.35.2.2~~ Does not include the fee paid for the test;

~~9.6.3.45.2.3~~ Does not include costs associated with the repairs or replacements of air pollution control equipment on the vehicle if the need for such adjustment, maintenance, replacement, or repair is due to disconnection of, tampering with, or abuse of the emissions control systems;

~~9.6.3.5~~ Does not include repairs performed to the vehicle's exhaust system to correct problems with excessive exhaust dilution;

Commented [JG44]: We aren't doing TSI inspections anymore.

~~9.6.3.65.2.4~~ Refers to repairs, maintenance, and diagnostic evaluations done in accordance with manufacturer's specifications, to the extent that the purpose is to reduce emissions;

~~9.6.3.75.2.5~~ Repairs performed on OBD compliant vehicles should be directly related to the diagnostic trouble codes identified by the vehicle and by further diagnostic tests on the vehicle;

~~9.6.3.85.2.6~~ Does not include parts replaced on OBD compliant vehicles that cannot be justified through diagnostic trouble codes or further diagnostic tests on the vehicle.

~~9.6.4~~ Information regarding all performed repairs shall be entered into the appropriate data base of the test equipment prior to the vehicle being retested.

Commented [JG45]: Repair information has never been entered into the test equipment and it shouldn't be a requirement.

~~9.6.55.3~~ Certificates of A Waiver shall only be issued by the Department unless the Department determines other acceptable methods of issuing the wWaivers. A wWaiver shall only be issued after determining that the vehicle complies with the requirements of this Section for waiver issuance.

~~9.6.6~~ Prior to referring the owner/operator to the Department for determining waiver eligibility, the I/M Program Station and the Certified Emissions Inspector shall verify that the repair and eligibility requirements of this Section have been met.

Commented [JG46]: Issuing waivers is a responsibility of the Department, not the I/M Program Station.

~~9.6.75.4~~ A Certificate of Waiver shall only be issued once to any vehicle that qualifies, throughout the lifetime of the vehicle.

~~9.6.85.5~~ A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a wWaiver.

9.6 The Department shall explore new technologies related to emissions inspections. As part of this exploration the Department may perform studies, run pilot projects, collect and analyze data, and make recommendations to the Board. If a new technology can be shown to be as effective as current technologies in reducing emissions and preventing fraud, the Department shall present these findings to the EPA. The Department shall then work with the EPA, the Board, and the Council to seek approval to incorporate the new technology as a testing method.

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10.0 ENGINE SWITCHING

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10.1 Engine switching shall be allowed only in accordance with EPA policy. If a vehicle that is subject to a visual inspection has an engine other than the original, the vehicle owner/operator must demonstrate to the Department that the engine meets or exceeds the requirements for the model year and class of vehicle in which it is installed. The new engine must be equally or more effective in controlling emissions as those systems originally manufactured on the vehicle.

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10.2 Vehicles not meeting the requirements of Section 10.0 shall be deemed as tampered and are not eligible for a Certificate of Waiver, unless they are restored to the original engine and emission control configuration.

10.3 The Department shall adhere to the policies listed in Appendix G to ensure vehicles with switched engines are inspected appropriately.

Commented [JG47]: Appendix G has been removed. Refer to Section 10.1 for guidance.

11.0 SPECIFICATIONS FOR CERTIFIED TESTING EQUIPMENT AND CALIBRATION CASES

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11.1 Approval of Certified Testing Equipment

11.1.1 Certified Testing Equipment shall meet the specifications as detailed in Appendix E.

11.1.2 It shall be illegal for any person to modify the hardware or software of approved emissions test equipment- Certified Testing Equipment without written application and formal approval by the Department and/or Contractor.

11.1.3 It shall be illegal for any person to gain access to any Department or vendor- Contractor controlled portions of an approved test equipment- Certified Testing Equipment without approval by the Department and/or vendor Contractor.

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~~11.2 Calibration Gases~~

Commented [JG48]: This section is not necessary with the removal of TSI inspections.

~~11.2.1 General: The approved vendor shall, on request, supply at a reasonable cost to the I/M Program Station, calibration gases approved by the Department. The approved vendor shall have approved, full calibration gas containers installed and operational at the time of delivery. The Department shall establish necessary procedures for approving calibration gases.~~

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~~11.2.2 Calibration Gas Blends: The calibration gases supplied to any I/M Program Station shall conform to the specifications of the Department as specified in Appendix E. All calibration gases shall meet all Federal requirements for the emissions warranty coverage. Only gas blends supplied by Department approved blenders shall be used to calibrate official Analyzers.~~

~~11.3 Warranty and Maintenance Requirements~~

Commented [JG49]: This should not be required by regulation. Warranties are discussed in the Technical Standards appendix.

~~11.3.1 It shall be the responsibility of the I/M Program Station to obtain warranty coverage for testing equipment supplied by the approved vendor. Coverage requirements will be determined by the Department.~~

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~~11.3.2 The testing equipment shall be maintained in accordance with the manufacturer's recommended maintenance schedule and records of this maintenance service shall be maintained for examination by the Department.~~

~~11.4 Gas Calibration and Leak Check~~

Commented [JG50]: This section is not necessary with the removal of TSI inspections.

~~Gas calibrations and leak checks shall be performed in accordance with the schedule referenced in Appendix E.~~

12.0 QUALITY ASSURANCE

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12.1 A quarterly inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. During the time of the inspection by the Department, the Department's representative shall have exclusive access to the Certified Testing Equipment. Inspections may be performed utilizing technology integrated into the Certified Testing Equipment.

~~12.1.1 During the time of the inspection and audit by the Department, the Department representative shall have exclusive access to the test equipment.~~

~~12.1.2 Required tools and equipment as noted in Section 7.1.5, shall be kept at the I/M Program Station at all times and shall be available for inspection by the Department at any time the inspection station is open for business.~~

12.2 ~~An annual~~ covert inspection and audit shall be made by a representative of the Department to verify compliance with this Regulation for each I/M Program Station. The Department will utilize registration data, inspections records, and other pertinent information to determine when an I/M Program Station will receive a covert inspection. A covert inspection is a tool the Department may utilize while investigating violations of this Regulation.

12.3 The Department may increase the frequency of inspections and audits for I/M Program Stations and/or Certified Emissions Inspectors if the Department receives information of a violation of this Regulation.

12.4 The Department shall regularly monitor I/M Program Stations and/or Certified Emissions Inspectors through inspection records and/or technology integrated into the Certified Testing Equipment.

~~13.0 CUTPOINT STANDARDS FOR MOTOR VEHICLES EXHAUST GASES~~

~~In order to obtain a valid emissions Certificate of Compliance, exhaust emissions from a motor vehicle subject to a biennial Two-Speed Idle Test shall not exceed the maximum concentrations for carbon monoxide (CO) and hydrocarbons (HC) as specified in Appendix B.~~

143.0 DISCIPLINARY PENALTIES AND RIGHT TO APPEAL

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143.1 When the Department, or its representative(s), receives information of a violation of any regulation contained herein which may result in a permit denial, revocation, or suspension, the Department shall notify the affected entity, in writing, informing the entity of the violation and penalties to be enforced. The affected entity may request a hearing within ten calendar days of the Department giving notice of the potential permit denial, revocation, or suspension. Only a written request for a hearing shall be honored by the Department. No appeal may be made on a formal warning.

143.1.1 In considering the appropriate administrative action to be taken as indicated in Appendix C, the Director shall consider the following:

- 143.1.1.1 whether the violation was unintentional or careless;
- 143.1.1.2 the frequency of the violation or violations;
- 143.1.1.3 the audit inspection and covert audit inspection history of the I/M Program Station and the Certified Emissions Inspector;

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143.1.1.4 whether the fault lies with the I/M Program Station or the Certified Emissions Inspector.

143.1.2 After consideration of the factors in Section 143.1.1 the Director may take appropriate administrative action as indicated in Appendix C against either the I/M Program Station, the Certified Emissions Inspector, or both.

143.2 Appeals Hearing Procedure:

143.2.1 An appeals hearing shall be held at the request of the affected entity in order to determine the accuracy of information obtained by the Department and whether there are mitigating factors which would justify a reduction of the imposed penalties.

143.2.2 The requesting party may bring to the hearing any witnesses and any evidence believed to be pertinent to the disciplinary action.

143.2.3 The appeal shall be heard by the Vehicle Inspection and Maintenance Appeal Board, hereafter I/M Board, consisting of at least three persons, who are not employees of Bear River Health Department, appointed by the Board. The I/M Board shall have the discretion to determine which witnesses shall be heard and what evidence is relevant.

143.2.4 Violations determined to be intentional or flagrant shall result in the maximum enforcement of the penalty schedule pursuant to Appendix C.

143.2.5 In considering whether to reduce a penalty indicated by Appendix C, the I/M Board and the Department shall consider the following:

143.2.5.1 whether the violation was unintentional or careless;

143.2.5.2 the frequency of the violation or violations;

143.2.5.3 the ~~audit inspection~~ and covert ~~audit inspection~~ history of the I/M Program Station and the Certified Emissions Inspector;

143.2.5.4 whether the fault lies with the I/M Program Station, the Certified Emissions Inspector, or both.

143.3 Written notice of the final determination of the I/M Board, including the I/M Board's finding under Section 14.2.5, shall be made within ten calendar days after the conclusion of the appeals hearing.

154.0 PENALTY

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154.1 Any person who is found guilty of violating any of the provisions of this Regulation, either by failing to do those acts required herein or by doing a prohibited act, shall be guilty of a class B misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended. If a person is found guilty of a subsequent similar violation within two years, he shall be guilty of a class A misdemeanor pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

154.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.

154.3 The Cache eCounty Aattorney's Office may initiate legal action, civil or criminal, requested by the Department to abate any condition that exists in violation of this Regulation.

154.4 In addition to other penalties imposed by a court of competent jurisdictions, any person(s) found guilty of violating any of this Regulation shall be liable for all expenses incurred by the Department.

154.5 A Penalty Schedule for permit warning, suspension, or revocation is adopted as Appendix C and may be amended by the Board as the Board deems necessary to accomplish the purposes of this Regulation.

~~14.6 The Department may request that the Utah Division of Motor Vehicles suspend or revoke a registered vehicle's registration if the vehicle is unable to meet emissions standards or if the vehicle has not complied with the required emission testing requirements pursuant to Section 41-1a-110(6), Utah Code Annotated, 1953, as amended.~~

165.0 SEVERABILITY

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If any provision, clause, sentence, or paragraph of this Regulation or the application thereof to any person or circumstances shall be held to be invalid, such invalidity shall not affect the other provisions or applications of this Regulation. The valid part of any clause, sentence, or paragraph of this Regulation shall be given independence from the invalid provisions or application and to this end the provisions of this Regulation are hereby declared to be severable.

176.0 EFFECTIVE DATE

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This Regulation shall become effective on ~~May 27, 2015~~ January 1, 2021 as adopted by the Bear River Board of Health.

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APPENDIX~~Appendix~~ A – FEE SCHEDULE

Fee Schedule

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Appendix A shall become effective upon adoption by the Board.

Permitting of an official I/M Program Station	\$250.00
Annual Renewal of I/M Program Station	\$50.00
Expired I/M Program Station Renewal	\$75.00
I/M Program Station Re-location	\$75.00
Permitting of a Certified Emissions Inspector	\$25.00
Renewal of Certified Emissions Inspector	\$15.00
Expired Certified Emissions Inspector Renewal	\$25.00
Official Station Sign	Cost
APC Fee for 12 month registration	\$3.00
APC Fee for 6 month registration	\$2.25
Emissions Inspection Fee – OBD Test	\$15.00
Emissions Inspection Fee – TSI and Tampering	\$20.00
Inspector Training Fee	\$25.00

Commented [JG51]: These fees are set by Cache County ordinance. We don't need to reference them again considering BRHD doesn't collect them.

APPENDIX B

**BEAR RIVER HEALTH DEPARTMENT
EMISSION STANDARDS
CUTPOINTS**

MOTOR VEHICLE EMISSIONS INSPECTION/MAINTENANCE PROGRAM

The following schedule gives the maximum allowable concentrations for carbon monoxide (CO) and hydrocarbons (HC) for both cars and trucks as determined by an approved infrared gas analyzer using the prescribed procedures. The effective date for these cutpoints is January 1, 2014.

ALL PASSENGER VEHICLES

1969-1978 LIGHT DUTY TRUCKS 6,000 POUNDS GVWR OR LESS

1979 AND NEWER LIGHT DUTY TRUCKS 8,500 POUNDS GVWR OR LESS

MAXIMUM CONCENTRATION STANDARDS

<u>MODEL YEAR</u>	<u>PERCENT CARBON MONOXIDE</u>	<u>PARTS/MILLION HYDROCARBONS</u>
1969	6.0	800
1970-1974	5.0	700
1975-1976	4.0	600
1977-1979	3.0	500
1980	2.0	300
1981-1995	1.2	220
1996 and newer	N/A OBD II	N/A OBD II

HEAVY DUTY TRUCKS AND VANS

1969-1978 6,001 AND OVER GVWR

1979-2007 OVER 8,500 GVWR

2008 AND NEWER OVER 14,000 GVWR

MAXIMUM CONCENTRATION STANDARDS

1969	7.0	1500
1970-1978	5.0	1200
1979-1980	4.0	1000
1981-2007	3.5	800
2008 and newer	3.5	800

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The minimum dilution factor must also be reached as part of the testing requirement. The dilution factor determination is contained in the analyzer specifications provided by the approved vendor.

NOTE: These should be considered as “cutpoints” for maximum allowable emissions levels. Vehicles must never be reset to these emission levels when readjustments are made, but rather shall be adjusted using manufacturer’s specifications. By using manufacturer’s specifications, the emissions levels should be well below the “cutpoints.”

APPENDIX B - RESERVED

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APPENDIX C – PENALTY SCHEDULE

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Violation (resets after 2 years of no similar violations unless revoked)	1st Occurrence	2nd Occurrence	3rd Occurrence	4th Occurrence
Failure to inspect or substituting a vehicle other than the vehicle on the test record – Registering a failing vehicle (<i>intentional pass</i>)	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Passing a failing vehicle or recording pass for tampering on a tampered vehicle (<i>gross negligence</i>)	Tech: 30 day suspension and mandatory retraining	Tech: 60 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years	
	Station: 15 day suspension	Station: 30 day suspension	Station: 60 day suspension	Station: Revocation of permit for up to 5 years
Falsifying an inspection record or emissions certificate or Failing a passing vehicle (<i>intentional</i>)	Tech: 180 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years		
	Station: 180 day suspension	Station: 270 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Non-certified person performing test – Using another inspector's access (<i>gross negligence table</i>)	Tech: 60 day suspension	Tech: 180 day suspension	Tech: Revocation of permit for up to 5 years	
	Station: 60 day suspension	Station: 180 day suspension	Station: Revocation of inspection station permit for up to 5 years	
Inaccurate or incomplete data entry (<i>incompetence</i>)	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years
Failure to follow proper test procedures – Other regulation violations (<i>incompetence</i>)	Tech: Formal warning and mandatory retraining	Tech: 30 day suspension and mandatory retraining	Tech: 90 day suspension and mandatory retraining	Tech: Revocation of permit for up to 5 years
	Station: Formal warning	Station: 15 day suspension	Station: 45 day suspension	Station: Revocation of inspection station permit for up to 5 years

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APPENDIX D – TEST PROCEDURES

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OBDII Test Procedures for gasoline and non-diesel based Alternative Fuel powered vehicles

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- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment.

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- 1.1 Vehicle Identification Number (VIN)
- 1.2 Gross Vehicle Weight Rating (GVWR)
- 1.3 Model year
- 1.4 Make
- 1.5 Model
- 1.6 Fuel Type
- 1.7 Engine size
- 1.8 Number of cylinders
- 1.9 Certification standard (EPA or California)

- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

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- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.

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3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the screen prompts until the test is complete.

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- 5 For 1996-2000 model year vehicles two (2) supported readiness monitors are allowed to be "not ready". For 2001 and newer vehicles one (1) supported readiness monitor is

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allowed to be “not ready”. If the “not ready” status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.

5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to “ready” upon re-inspection.

6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

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7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:

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9.1 Mismatch between entered VIN and OBD VIN;

9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, catalyst, and/or oxygen sensor;

9.3 A change in supported readiness monitors since the last inspection;

9.4 A change in communication protocol since the last inspection;

9.5 A change in OBD VIN since the last inspection;

9.6 The presence of an OBD VIN in a vehicle that does not support OBD VINs;

9.7 The absence of an OBD VIN in a vehicle that supports OBD VINs; or

9.8 A change in PID count since the last inspection.

10 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.

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11 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

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Diesel and diesel based Alternative Fuel Powered Vehicles Test Procedures

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All diesel powered vehicles 2007 and newer, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

- 1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:

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- 1.1 Vehicle Identification Number (VIN)
- 1.2 Gross Vehicle Weight Rating (GVWR)
- 1.3 Model year
- 1.4 Make
- 1.5 Model
- 1.6 Fuel Type
- 1.7 Engine size
- 1.8 Number of cylinders
- 1.9 Certification standard (EPA or California)

- 2 The Certified Emissions Inspector shall visually examine the instrument panel to determine if the Malfunction Indicator Light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. The visual result shall be accurately recorded in the Certified Testing Equipment.

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- 3 The Certified Emissions Inspector shall locate the Diagnostic Link Connector (DLC) on the vehicle being tested. The vehicle should be connected to the Certified Testing Equipment when prompted.

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- 3.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.
- 3.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

- 4 When prompted by the Certified Testing Equipment the Certified Emissions Inspector should start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the screen prompts until the test is complete.

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- 5 Two supported readiness monitors are allowed to be "not ready". If the "not ready" status exceeds these numbers the vehicle must be driven additional miles or have appropriate repairs made.

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- 5.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420-P0439) must have the catalyst monitor set to "ready" upon re-inspection.

6 If the MIL is commanded on while the engine is running, regardless of the presence of Diagnostic Trouble Codes (DTC), the vehicle will fail the test and will require repairs.

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7 Certain vehicles have been determined to be OBDII deficient. The Certified Testing Equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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8 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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9 Certain vehicles will be flagged by the testing software during the inspection and may be recalled to the I/M Technical Center for a Compliance Assurance Inspection. Vehicles will be flagged for the following items:

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9.1 Mismatch between entered VIN and OBD VIN;

9.2 Any of the following readiness monitors being unsupported: Misfire, fuel system, component, NMHC, and/or NOx/SCR;

9.3 A change in supported readiness monitors since the last inspection;

9.4 A change in communication protocol since the last inspection;

9.5 A change in OBD VIN since the last inspection;

9.6 The absence of an OBD VIN; or

9.7 A change in PID count since the last inspection.

10 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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11 Certain vehicles might not communicate with the Certified Testing Equipment. These vehicles will be referred to the I/M Technical Center for a Referee Inspection.

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12 A vehicle owner/operator that challenges the results of an official emissions inspection may request a Referee Inspection at the I/M Technical Center.

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All diesel powered vehicles 1998-2006, with a gross vehicle weight rating less than 14,001 pounds, shall be tested as follows:

1 The Certified Emissions Inspector shall verify the following items from the vehicle and accurately record them in the Certified Testing Equipment:

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1.1 Vehicle Identification Number (VIN)

1.2 Gross Vehicle Weight Rating (GVWR)

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1.3 Model year

1.4 Make

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1.5 Model

1.6 Fuel Type

1.7 Engine size

1.8 Number of cylinders

1.9 Certification standard (EPA or California)

2 Diesel powered vehicles shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the decal is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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3 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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4 If the OBDII System is identified on the VECI label, the procedure in Section 2 through 5 shall be followed.

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4.1 An inspection of the OBDII System shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

Compliance Assurance Inspection

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1 A vehicle that is referred to the I/M Technical Center for a Compliance Assurance Inspection shall be subject to an official emissions inspection. A visual anti-tampering inspection shall also be included in every Compliance Assurance Inspection. The air pollution control devices listed in the Vehicle Emissions Control Information (VECI) label shall be in place and apparently operable on the vehicle. If the VECI label is missing, reference material may be used to identify the air pollution control devices required for the vehicle.

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1.1 A vehicle that has missing or tampered air pollution control devices will fail the Compliance Assurance Inspection and will not be issued a Certificate of Compliance.

1.2 A vehicle that has missing or tampered air pollution control devices and has already been issued a Certificate of Compliance will be required to replace or

repair the devices. Owners/operators of vehicles that do not comply will be subject to the penalties in this Regulation.

- 2 The Department will use data obtained by the Utah Division of Motor Vehicles and inspection data to determine if a vehicle should be subject to a Compliance Assurance Inspection.
- 3 The owner/operator of a vehicle subject to a Compliance Assurance Inspection will be notified in writing of the requirement to present the vehicle for inspection.

Referee Inspection

- 1 Vehicles may be referred to the I/M Technical Center for a Referee Inspection. During a Referee Inspection the Department may override the normal testing criteria and issue a Certificate of Compliance for the following reasons:
 - 1.1 The vehicle will not communicate with the Certified Testing Equipment but will communicate with other scan tools. The vehicle must meet all other testing requirements including readiness status and MIL status; or
 - 1.2 The vehicle has met the criteria to be issued a Waiver.
- 2 A Referee Inspection may also be performed when an owner/operator believes the emissions inspection performed at an I/M Program Station was not done correctly.

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OBDII Test Procedures

On-Board Diagnostics (OBD) is the monitoring and fault detection/notification process of the Powertrain Control Module (PCM) related to the vehicle's emission control system and powertrain operation on 1996 and newer model year vehicles. When an emissions control malfunction is detected, a dashboard light illuminates, displaying one of the following: "Check Engine," "Service Engine Soon," or the international engine symbol. If the OBD system detects a problem that may cause vehicle emission to exceed applicable federal standards, the Malfunction Indicator Light (MIL) is illuminated and the appropriate diagnostic trouble code (DTC) and engine operating conditions will be stored in PCM memory.

1.0 Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.

1.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

1.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

2.0 Turn the ignition switch to the off position for at least 30 seconds.

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3.0—Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the “key on, engine off” (KOEO) position. Enter your visual inspection result into the test equipment.

3.1—If the MIL does not illuminate, the vehicle fails the test and must be repaired.

4.0—Turn the ignition switch to the off position for at least 30 seconds.

5.0—Start the engine so the vehicle is in the “key on, engine running” (KOER) condition and follow the test equipment screen prompts until the test is complete.

6.0—For 1996-2000 model year vehicles two (2) not ready flags are allowed for a passing test. For 2001 and newer vehicles one (1) not ready flag is allowed. If the not ready status exceeds these numbers the vehicle must be driven additional miles until readiness monitors are set “ready” or repairs have been made allowing readiness flags to set ready.

6.1—A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420—P0439) must have the catalyst monitor set to “ready” upon re-inspection.

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7.0 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.

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8.0 Certain vehicles have been determined to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.

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9.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

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10.0 A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.

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Two-Speed Idle (TSI) Test Procedures

During a two-speed idle test, the Analyzer measures the tailpipe exhaust emissions of a vehicle while the vehicle idles at both high and low speed. The Analyzer tests vehicles for carbon dioxide in addition to hydrocarbons and carbon monoxide. The two-speed idle test comprises two phases: (1) high speed test (2200-2800 RPMs) for the first phase of the emissions test; then, (2) tested at idle (350-1100 RPMs).

~~1.0 The Certified Emissions Inspector shall not inspect or test any motor vehicle with a mechanical condition which may cause injury to inspection personnel or damage to the inspection station or test equipment or which may affect the validity of the test, until such condition is corrected. Such conditions include, but are not limited to: coolant, oil, or fuel leaks; low oil or low fluid levels; and high visible emissions.~~

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~~2.0 Prepare the Analyzer for testing as specified by the manufacturer.~~

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~~3.0 Each vehicle shall be checked to determine that it is at normal operating temperature by feeling the top radiator hose or by checking the temperature gauge. Each vehicle shall be at normal operating temperature before performing the emissions inspection.~~

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4.0 The inspection shall be performed with the transmission in “park” or “neutral” and with all accessories off and the emergency brake applied.

5.0 The Analyzer probe shall be inserted into the exhaust pipe at least twelve inches or as recommended by the Analyzer manufacturer, whichever is greater.

6.0 If a baffle or screen prevents probe insertion of at least twelve inches, a suitable probe adapter or snug fitting, non-reactive hose which effectively lengthens the exhaust pipe shall be used.

7.0 For all vehicles equipped with a multiple exhaust system that does not originate from a common point, both sides shall be tested simultaneously with an approved adapter.

8.0 When inspecting a vehicle under windy conditions, the tailpipe shall be shielded from the wind with a suitable cover.

9.0 With the tachometer properly attached, the vehicle shall be tested by following the screen prompts, answering questions, and entering required data. Vehicles failing because of excessive exhaust dilution shall repair the dilution problem prior to continuing the emission test. The dilution standard shall be contained in the Analyzer specifications provided by the approved vendor.

10.0 The Certified Emissions Inspector shall verify the presence of a gas cap and enter the information into the Analyzer.

11.0 Certain vehicles cannot be tested in the high speed (2200-2800 RPM) mode. The test equipment software will maintain a list of these vehicles and perform a modified test.

12.0 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.

13.0 A Certificate of Compliance shall be issued if the vehicle emissions levels are the same as or less than the applicable cutpoint standards as referenced in Appendix B, and the vehicle has a gas cap present.

14.0 Switchable Bi-Fuel vehicles shall be tested on both fuels. The software will require two separate tests for these vehicles.

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Diesel Powered Vehicles Test Procedures

1.0 All diesel powered vehicles 2007 and newer, less than 14,001 lbs GVWR, shall be tested in accordance with the following procedure:

1.1 Locate the Diagnostic Link Connector (DLC) on the vehicle being tested. Connect the vehicle to the test equipment.

1.1.1 If the DLC is missing, has been tampered with, or is otherwise inoperable, the vehicle fails the test and shall be repaired.

1.1.2 If the DLC is inaccessible, the problem must be remedied before the test can continue.

1.2 Turn the ignition switch to the off position for at least 30 seconds.

1.3 Visually examine the instrument panel to determine if the malfunction indicator light (MIL) illuminates, at least briefly, when the ignition key is turned to the "key on, engine off" (KOEO) position. Enter your visual inspection result into the test equipment.

~~1.3.1 If the MIL does not illuminate, the vehicle fails the test and must be repaired.~~

~~1.4 Turn the ignition switch to the off position for at least 30 seconds.~~

~~1.5 Start the engine so the vehicle is in the "key on, engine running" (KOER) condition and follow the test equipment screen prompts until the test is complete.~~

~~1.6 If the vehicle has 1 or more monitors "not ready", follow the attached flowchart to determine whether the readiness check will be marked as pass or fail.~~

~~1.6.1 A vehicle that fails the initial inspection for a catalyst related fault (i.e., P0420–P0439) must have the catalyst monitor set to "ready" upon re-inspection.~~

~~1.7 If the MIL is commanded on while the engine is running, regardless of Diagnostic Trouble Codes (DTC's), the vehicle will fail the test and will require repairs.~~

~~1.8 Certain vehicles have been determined by the EPA to be OBDII deficient. The test equipment software will maintain a list of these vehicles and perform a modified OBDII test.~~

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~~1.9 A Certificate of Compliance will be issued if the vehicle meets the requirements established in this section.~~

~~2.0 All diesel powered vehicles 1998-2006, less than 14,001 lbs GVWR, shall be subject to a visual anti-tampering inspection. The air pollution control devices identified in the emission decal shall be in place and apparently operable on the vehicle. If the decal is missing the vehicle owner/operator shall have the decal replaced.~~

~~2.1 The devices listed on the decal must be present and apparently operable to pass the emission inspection.~~

~~2.2 If the OBD II system is identified in the emission decal, the procedure in Section 1.1 through 1.5 shall be followed.~~

~~2.3 If the decal is missing, the I/M Program Station and/or the Certified Emissions Inspector may use reference material as approved by the Department to identify the air pollution control devices required for the vehicle.~~

~~2.4 A vehicle must meet the requirements of Section 41-6a-1626, Utah Code Annotated 1953, as amended, regarding visible emissions in order to qualify for a Certificate of Compliance.~~

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2.5—A Certificate of Compliance shall be issued if the emissions control devices are in place and apparently operable. An inspection of the OBD-II system as referenced in Section 2.2 shall be for informational purposes only and will not determine whether a vehicle passes or fails the emission inspection.

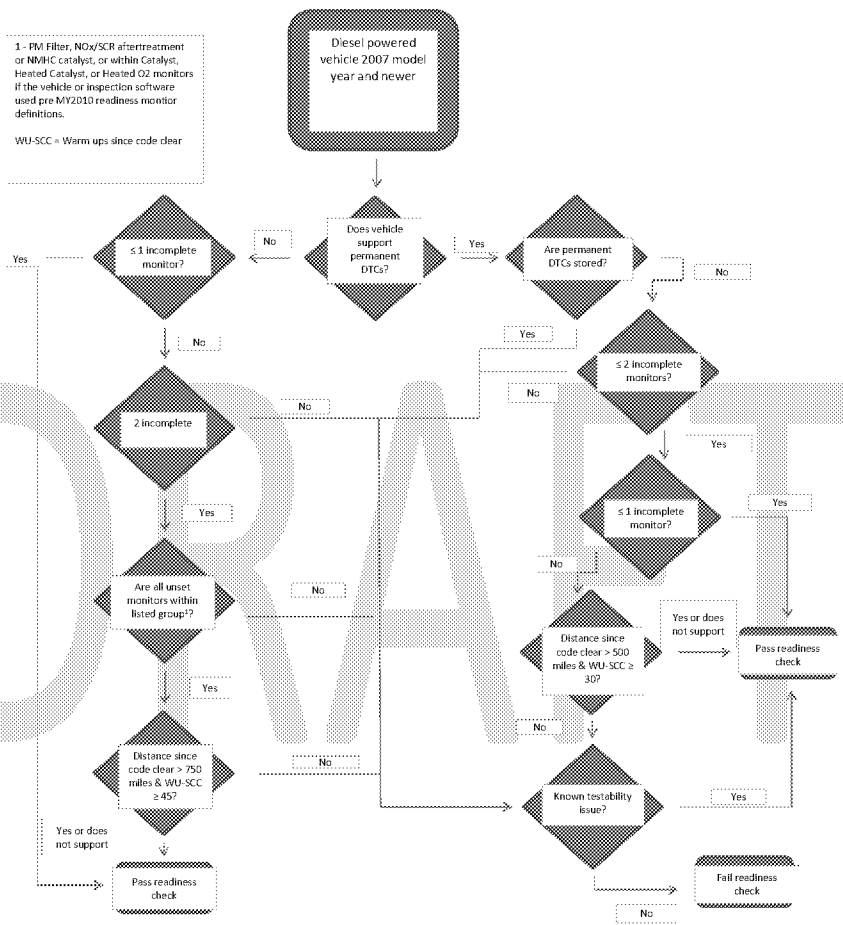
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Diesel Readiness Check Flowchart



APPENDIX E -- Technical Specifications and Calibration Gas CERTIFIED TESTING EQUIPMENT STANDARDS

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1. General

This appendix contains specifications for Contractors to design Certified Testing Equipment to be used in the Cache County I/M Program.

1.1 Design Goals

Certified Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment. The software must be designed for maximum operational simplicity. The software must prevent users from clearing Diagnostic Trouble Codes (DTC), changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Certified Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data.

These technical specifications contain the minimum requirements for Certified Testing Equipment used to perform official emissions inspections in Cache County, UT.

1.2 Manuals

All Certified Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions.

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maintenance instructions, and initial startup instructions. The manual may be provided in electronic format and shall be accessible from the Certified Testing Equipment.

1.3 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the Contractor and the I/M Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Certified Testing Equipment.

The Contractor shall provide a minimum of one-year warranty coverage on each unit of Certified Testing Equipment sold or leased. The one-year warranty coverage shall begin on the date of purchase and shall be included in the unit pricing for the Certified Testing Equipment. An extended warranty shall be made available to the I/M Program Stations that purchase or lease Certified Testing Equipment.

1.4 Contractor Provided Services

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Certified Testing Equipment:

- Delivery, set-up, and verification of proper functionality of the Certified Testing Equipment; and
- Training on the use and maintenance of the Certified Testing Equipment.

The Contractor shall provide the following services to the I/M Program Station during the initial one-year warranty coverage period and thereafter to any I/M Program Station that purchases an extended warranty:

- Full system support and repair as detailed in the warranty coverage agreement; and
- Appropriate service response, either on-site or remote, by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, and national/state holidays (New Year's Day, Human Rights Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), of a request from the I/M Program Station. All system repairs, component replacements, and/or Certified Testing Equipment adjustments must be accomplished within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Certified Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.5 Tamper Resistance

The Certified Testing Equipment operators, Department personnel, and Contractor authorized service technicians shall be prevented from changing any inspection results, programs, or data contained on the Certified Testing Equipment. The Contractor shall use appropriate software and/or hardware provisions to protect files and programs.

2 – Hardware/Software Requirements

2.1 Accessing the OBD System

The Certified Testing Equipment must include hardware and software necessary to access the on-board computer systems of vehicles subject to OBD inspections. This includes the following:

- 1996 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 8,500 pounds or less
- 2008 and newer gasoline and non-diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less
- 2007 and newer diesel and diesel based alternative fuel vehicles with a gross vehicle weight rating of 14,000 pounds or less

The Certified Testing Equipment shall be compliant with the recommended practices regarding OBD inspections contained in J1962, J1978, and J1979 as published by the Society of Automotive Engineers (SAE). The Certified Testing Equipment must be able to connect to the vehicle's data link connector (DLC) and access, at a minimum, the following OBD data:

- Service modes \$01, \$03, \$06, \$07, \$09, \$0A

The Certified Testing Equipment must be capable of communicating with all OBD vehicles that use, at a minimum, the following communications protocols:

- International Organization for Standardization (ISO) 9141
- Variable Pulse Width (VPW)
- Pulse Width Modulation (PWM)
- Keyword Protocol 2000 (KWP)
- Controller Area Network (CAN)

2.2 Barcode Scanner

The Certified Testing Equipment must include a bar code scanner capable of reading both 1D and 2D barcodes. The bar code scanner must be able to read the barcode through a windshield. The barcode scanner must be able to withstand multiple 6.5 foot (2 meter) drops to concrete and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

The bar code scanner may be a stand alone device or may be integrated into the Certified Testing Equipment.

2.3 Camera

Certified Testing Equipment shall be equipped with video capturing equipment. The video capturing equipment must capture video from each official emissions inspection.

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1.0—GENERAL

This appendix contains specifications for Emission Inspection System Contractors (hereafter, Contractors) to design Testing Equipment to be used in the Cache County Vehicle Emissions Inspection and Maintenance Program (hereafter, I/M Program). Testing Equipment to be used in the I/M Program must be capable of performing consistent Two-Speed Idle (TSI), and On-Board Diagnostics (OBD) emissions inspections.

1.1—Design Goals

Testing Equipment must be designed and constructed to provide reliable and accurate service in the automotive service environment and have a useful life of at least five years. The software must be designed for maximum operational simplicity and be capable of providing emissions readings or codes that can be used for vehicle diagnostics. A manual, non-test mode should be available to perform vehicle diagnostics. The software must prevent users from clearing Diagnostic Trouble Codes, changing readiness status, or performing other actions that could change the results of an official emissions test. In addition, the Testing Equipment must include security measures that will prevent unauthorized modifications to the software or inspection data, record unauthorized entry, also known as tampering, and prevent subsequent inspections when tampering is detected.

These technical specifications contain the minimum requirements for Testing Equipment used to perform emissions inspections in the I/M Program. Contractors may include additional items with approval from the Bear River Health Department (hereafter, the Department).

1.1.1—Identification Data

A nameplate including the following information must be permanently affixed to the housing of the Testing Equipment:

- Name and address of manufacturer;
- Model description;
- Serial number; and
- Date of assembly.

In addition, the Contractor shall affix a label to the housing of the Testing Equipment that contains a toll-free telephone number for customer service. This telephone number must also be displayed on error messages that recommend the need for service by the manufacturer.

The Testing Equipment must also electronically display:

- Nameplate data;
- Testing Equipment number; and

- ◆ ~~Propane Equivalency Factor (PEF).~~

1.2 Manuals

All Testing Equipment sold or leased by the Contractor must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial startup instructions. The manual may be provided in an electronic format and should be accessible from the Testing Equipment.

1.3 Certification Requirements

The Contractor shall submit a letter to the Department stating that the Testing Equipment model sold or leased by the Contractor or its authorized representatives satisfies all design and performance criteria described in these specifications. Unless otherwise specified, a copy of the software documentation listed below must be submitted to the Department as part of the certification application. The documentation must include, at a minimum, the following:

- ◆ ~~Complete program listing(s);~~
- ◆ ~~Functional specifications;~~
- ◆ ~~Functional flowcharts of the software;~~
- ◆ ~~Example inputs and outputs from all processes;~~
- ◆ ~~Detailed interface information on system components including the identification of protocol and output specifications; and~~
- ◆ ~~File layouts.~~

To ensure proper maintenance of all Testing Equipment, a full description of the Contractor's service procedures and policies, sample contracts, warranties, and extended service agreements must be provided as part of the certification application. The Contractor shall provide a training plan to the Department that will be used to conduct certification training of potential inspectors on the use of the Testing Equipment. The Contractor shall supply to the Department and maintain at least one piece of Testing Equipment.

1.3.1 Escrow of Software

The Contractor must submit a letter of corporate authorization agreeing to place software source codes and other pertinent technical information in an escrow placement approved by the Department. The Contractor shall contract with the approved escrow company and provide the Department with a copy of the contract including the Department as a beneficiary. Certification of the Testing Equipment will not be valid until this condition has been met.

The Contractor must place in escrow the most recent version of the Testing Equipment software, including but not limited to, the actual software code and related materials used to meet this specification. The software will be turned over to the Department only if the Contractor defaults or cannot ensure continued performance of the contract.

In the event that the software is transferred, the Department shall protect it from public dissemination and commercial usage to the extent required by law. The software may be used, maintained, and updated by the Department, or its assignee, to support the I/M Program. At a minimum, the Department shall:

- Limit source code access to parties necessary to maintain and update the analyzers;
- Require all parties to sign a non-disclosure agreement before obtaining access to the code; and
- Grant no license permitting an entity to use any part of the codes for any commercial purpose other than to update and operate the analyzers.

The Department is not interested in the disclosure of proprietary information or the detailed inner workings of the software. However, it is essential that the software, schematics, and drawings be available in case the Contractor defaults.

As a prerequisite to certification, the Contractor shall furnish a performance bond to the Department. This bond must be in a form approved by the Department, executed as a surety by a bonding company authorized to do business in the State of Utah, and signed by a licensed resident agent. The performance bond must be for \$250,000 and must remain valid for the entire time period that the Contractor participates in the I/M Program. The performance bond must cover all Testing Equipment that is certified to conduct emissions inspections in the I/M Program.

The performance bond may be used by the Department at any time if the Contractor is in default of the requirements of these specifications, including but not limited, to the following "Events of Default":

- A. The Contractor fails to remedy a breach of covenant, representation, or warranty required by these specifications within thirty (30) days after written notice of such breach has been given to the Contractor by the Department;
- B. The Contractor makes a general assignment for the benefit of creditors, admits in writing its inability to pay debts as they mature, institutes proceedings to be adjudicated upon voluntary bankruptcy, consents to the filing of a bankruptcy proceeding against it, files a petition or answer or consent seeking reorganization, readjustment, arrangement, composition, or similar relief under federal bankruptcy or any other similar applicable law(s), consents to the filing of any such petition, consents to the appointment of a receiver;

liquidator, trustee, or assignee in bankruptcy or insolvency of the manufacturer or a substantial part of its property, or takes action to further any of these purposes; or

~~C. A court of competent jurisdiction enters a decree or order adjudging the Contractor as bankrupt or insolvent, or approving a properly filed petition seeking reorganization, readjustment, arrangement, composition, or similar relief for the Contractor under the federal bankruptcy or any other similar applicable law(s), and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or a decree or order of a court of competent jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of the manufacturer or of a substantial part of its property, or for the liquidation of its affairs, is entered, and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or any substantial part of the property of the Contractor is sequestered or attached and is not returned to the Contractor or released from such attachment within sixty (60) days thereafter.~~

To require performance by the surety under the performance bond, the Department shall give written notice of the event of default to the Contractor, specifying the date upon which the surety performance must begin.

The Director or his designee shall release the performance bond once it is determined that the Contractor has satisfactorily completed its obligations in accordance with the terms of these specifications, or at an earlier date, if it is determined by the Director to be in the best interest of the Department.

1.4 Warranty Coverage and Extended Service Agreements

~~A written warranty coverage agreement, signed by an authorized representative of the Contractor and the IM Program Station, which provides a complete description of coverage for all systems and components and all Contractor provided services listed below in Contractor Provided Services, must accompany the sale or lease of each unit of Testing Equipment.~~

~~The original manufacturer's warranty must be a minimum of one year from the date of purchase. An extended warranty service agreement must be available to the Testing Equipment owner upon the expiration of the manufacturer's original warranty period. Cost disclosures of consumable inventory items and extended warranty service agreements with detailed descriptions of coverage must be available to all Testing Equipment owners.~~

~~The cost of extended warranty service agreements must be identified in the Contractor's response to the RFP~~

1.5 Contractor Provided Services

A Contractor authorized repair technician is a Testing Equipment service technician that is authorized by the Contractor to perform service on their fleet of Testing Equipment. Only Contractor authorized repair technicians may access the secure areas on the Testing Equipment.

The Contractor authorized repair technician shall perform a gas calibration prior to returning an Analyzer to service whenever a component of the emissions measurement system is repaired or replaced. Similarly, the Contractor authorized repair technician shall perform a leak check each time the Analyzer's sample line is broken and repaired. Contractor authorized repair technicians shall have software driven menu options or other acceptable method that records the transfer of inspection station, inspector information, and other data from one unit of Testing Equipment to another without manual inputs or the transfer of previous data.

The Department may require the Contractor to conduct on-site or laboratory testing of the Testing Equipment in order to document continued compliance. The Contractor shall supply the I/M Program Station a temporary replacement unit of Testing Equipment that meets the I/M Program requirements if a unit of Testing Equipment is removed from the I/M Program Station for repair or testing. The Contractor shall be responsible for any costs incurred under this requirement.

The Contractor shall correct software features that do not meet these specifications to the satisfaction of the Department. The enhancement of operational software must be specified by the Department and be designed to update through the internet. Unless authorized by the Department, software enhancements must be available for beta testing within 120 days of commencement of a software update contract and receipt of an updated Testing Equipment specification. The Contractor shall not modify any existing Testing Equipment software without obtaining approval from the Department.

The Contractor shall be responsible for training Department officials responsible for oversight of the I/M Program, including but not be limited to, the instruction on all operational, maintenance, and quality control features of the Testing Equipment sampling system, full access to and use of inspection, audit, and calibration menus, and optional programs offered to inspectors. This training must be conducted at the Contractor's expense as a condition of certification, and upon written request by the Department.

The Contractor shall provide the following services to the I/M Program Station as part of any sale, lease, or loan of Testing Equipment:

- ◆ Delivery, installation, calibration, and verification of the proper operating condition of the Testing Equipment;
- ◆ Two extra sample filters with each TSI Analyzer, and an additional printer cartridge or a certificate redeemable for a printer cartridge for all Testing Equipment;

- ◆ ~~A minimum of two hours operation and maintenance training to the owners and operators for each unit of Testing Equipment purchased or leased.~~

The Contractor shall provide the following services to the I/M Program Station as part of the manufacturer's original warranty and thereafter as a portion of the extended warranty service agreement.

- ◆ ~~Full systems support and repair, including temporary provision of units of equal quality and specification;~~
- ◆ ~~Quarterly examination, calibration, and routine maintenance of Analyzer and sampling systems on the TSI Analyzers. Annual examination must be required on the OBD portion of the Testing Equipment.~~
- ◆ ~~On-site service response by a Contractor authorized repair technician within one business day (Saturday shall be considered a business day), excluding Sundays, national/state holidays (New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Pioneer Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), and other days the purchaser's business might be closed, of a request from the I/M Program Station. The names, toll free telephone number(s), and service facility addresses of the Contractor's representatives responsible for Equipment service must be provided to the I/M Program Station. All system repairs, component replacements, and/or Testing Equipment adjustments, including reset of quality control lockout systems, must be accomplished on-site within a minimum average response time of 8 business hours after a service request has been initiated. If the completion of this work is not possible within this time period, Testing Equipment of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.~~

1.6 Electronic Transmission Security

The Testing Equipment shall utilize a standard protocol encryption method for communications with the host incorporating error detection and not incorporating error correction. The Testing Equipment shall utilize bitsum checking for all messages.

1.7 Tamper Resistance

The controlled access design must be the responsibility of the Contractor, but all security measures must be submitted to the Department for approval. The Testing Equipment operators, Department personnel, and field representatives authorized by the Contractor shall be prevented from creating or changing any inspection results, programs, or data contained on the Testing Equipment. The Contractor shall use appropriate software and hardware provisions to protect I/M files and programs. The file and program protection may consist of mechanical systems in combination with electronic and software systems. The protection features must prevent access to the secured portions of the hard disk containing I/M programs and inspection data. The control key or its functional

equivalent, which gives access to the operating system (OS), must not be activated except through the use of a password on the audit menu. The password must be chosen by the Department at the time of certification testing. Other security or protection alternatives may be proposed by the Contractor for approval by the Department.

The Contractor shall, at a minimum, develop tamper resistant features to prevent unauthorized access through the Testing Equipment cabinet. Micro switches, keyed and software controlled locks, and software algorithms requiring the use of an access code must all be used where appropriate. Any unauthorized access to the secured areas of the Testing Equipment must be detected, even when the power is off. A software lockout algorithm must be activated should tampering occur, which would abort any existing inspection sequence and prevent further inspections until the lockout is cleared by a field representative authorized by the Department. The Contractor shall develop a system to allow Contractor authorized repair technicians to clear tamper lockouts only during authorized service calls. The lockout system must be designed so that it can be activated from the audit menu by Department personnel. The Contractor may use keyed locks on the cabinet doors to secure the disk drives as long as the locks are built in and can be changed by authorized personnel should a security problem be identified. A software controlled solenoid lock may also be used on the secured drive door of the Testing Equipment. The solenoid lock may be used instead of or in addition to any key or combination lock that may be provided. The Testing Equipment software must control the solenoid lock and unlatch the doors in response to authorized requests from the audit menu while maintaining the appropriate levels of security.

A tamper file must be created that includes the date, time, type, and location of the tamper lockout, date and time the lockout was cleared, and who cleared the lockout. The tamper lockout type and location must be accessible only through the lockout function of the Testing Equipment's audit menu.

Access to the compact disc drive (CD), if applicable, must be available to I/M Program Station personnel at all times. However, access to the BIOS, I/M related programs, and data must be secured separate from the CD and additional drives. The Contractor shall provide a security method approved by the Department for the CD drive(s) to prevent unauthorized reads, writes, and executable. However, the Contractor may offer Testing Equipment with additional disk drives that can run optional software application programs.

The Testing Equipment must prevent Contractor authorized repair technicians from performing the following, except in a manner approved by the Department:

- Clearing a state lockout;
- Clearing a lockout for a failed three day gas calibration or leak check;
- Adding, deleting, or modifying test data;
- Adding, deleting, or modifying I/M Program Station information or an Certified Emissions Inspector's license number; and

- ◆ ~~Altering the calibration gas bottle values.~~

~~1.8 Automated Inspection Process Software and Displays~~

The inspection process, data collection, and quality control features of the Testing Equipment must be automated as much as possible. The software must automatically select the emission standards for the vehicle from an internal reference table. Vehicle identification information must be derived from a database accessed over a real time data system to the Testing Equipment. Access to the Vehicle Identification Database (VID) shall be accomplished by entry of the vehicle identification number (VIN) in its entirety. Provisions must be made for manual entry of data for vehicles not in the reference files of the Testing Equipment. The Contractor in consultation with the Department shall customize how the emission testing results are displayed on the Testing Equipment and on the approved paperwork provided to the owner of the vehicle.

~~2.0 HARDWARE REQUIREMENTS~~

~~2.1 Overview~~

The hardware requirements for the Analyzer must meet or exceed specifications as published by the California Bureau of Automotive Repair (BAR) and contained in the "BAR-97 EMISSIONS INSPECTION SYSTEM SPECIFICATIONS" (BAR-97), dated May 1996, except where reference is made to ASM testing and NOx gas measurement requirements. The Analyzer may include all amendments made to the BAR-97 hardware specifications to present date. Each Analyzer shall be equipped with Bar Code Scanner, Engine Revolutions per Minute Detection System and Real Time Inspection Testing Monitoring System.

~~2.2 Accessing the OBD System~~

The Testing Equipment must include hardware and software necessary to access the on-board computer systems on all model year 1996 and newer gasoline and natural gas powered vehicles. The Testing Equipment must also be able to access the on-board computer system on all model years 2007 and newer diesel powered vehicles. The equipment design and operation of the Testing Equipment must meet the federal requirements contained in Title 40 of the Code of Federal Regulations (CFR), Chapters 85.2207-2231 and the recommended practices regarding OBD inspections contained in the J1962, J1978 and J1979 published by the Society of Automotive Engineers (SAE). The Testing Equipment must be able to connect to the vehicle's OBD connector and access, at a minimum, the following OBD data:

- ◆ ~~Service modes: \$01, \$03, \$06, \$07, \$09, \$0A~~

At a minimum, the Testing Equipment must also be capable of communicating with all OBD vehicles that use the following communications protocols:

- ◆ ~~International Organization for Standardization (ISO) 9141;~~

- ◆ ~~Variable pulse width (VPW) as defined in the SAE's J1850;~~
- ◆ ~~Pulse width modulation (PWM) as defined in the SAE's J1850;~~
- ◆ ~~Keyword protocol 2000 (KWP); and~~
- ◆ ~~Controller area network (CAN) as defined in the ISO 15765-4.3:2001.~~

The OBD interrogation process must be fully integrated into the Testing Equipment, automated, and require no inspector intervention to collect and record the OBD data retrieved via the OBD connector link. No separate interface may be used.

2.3 ~~OBD Inspection Equipment~~

The OBD inspection Equipment apply only to the OBD communication components, which must meet all federal requirements contained in 40 CFR §§85.2207–85.2231 and recommended practices contained in the J1962, J1978, and J1979 published by the SAE. The Equipment must meet criteria contained in the EPA's guidance document, "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program" (EPA, 2001) or EPA's applicable update to this document.

2.4 ~~Bar Code Scanner~~

The bar code scanner must be able to read a one-dimensional (1-D) and a two-dimensional (2-D) bar code through a windshield and use visible laser diode technology or an equivalent approved by the Department. The bar code scanner must not be able to read Universal Product Code (UPC) 1-D bar codes. The bar code scanner must be able to withstand multiple drops to concrete covering a distance of at least 4 feet and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

2.5 ~~Engine Revolutions per Minute Detection~~

Testing Equipment must be equipped with a tachometer, or equivalent software and hardware necessary to detect engine RPM from the original equipment manufacturer (OEM) ignition technologies in use at the time of certification. Possible updates may be required to enable future ignition systems to be monitored for engine RPM. A software "HELP" screen must be available to help the Certified Emissions Inspector locate an RPM signal. The cable type connection must be at least 25 feet long (measured from the front of the Testing Equipment).

Based on the vehicle identification information available to the Certified Emissions Inspector, the Testing Equipment must display messages indicating when the vehicle under inspection requires a specific type or method of the tachometer pick-up connection. A digital display tachometer must be displayed to measure engine speed. For TSI Analyzers, RPM readings must be recorded on a second-by-second basis for the 10 second or 5 second period that is used to determine the pass or fail status of the TSI emissions inspection, respectively. The tachometer operation must use one of the following means:

- ◆ Radio frequency-type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles using distributorless ignition systems (DIS);
- ◆ Cable-type connection capable of detecting engine RPM of current OEM ignition technology;
- ◆ Battery/accessory power connection; or
- ◆ Cable-type connection capable of detecting engine RPM via the OBD port.

During the official inspection process the Testing Equipment must prompt the Certified Emissions Inspector to shut the engine off while connecting the cable-type RPM connection. The RPM bypass function must be made available when the live engine RPM is displayed for the first time. If the RPM cannot be obtained, the Certified Emissions Inspector shall be allowed to bypass the RPM. The Certified Emissions Inspector must simultaneously strike at least two keys to activate the RPM bypass. The bypass function must no longer be available once the emission inspection has begun.

The Certified Emissions Inspector may use the previously listed methods for 1996 and newer model-year vehicles if the OBD port is unable to detect engine RPM. Tachometer performance must be no less than a 0.5-second RPM response time with an accuracy of ± 3 percent of actual RPM.

2.6 Real-Time Inspection Testing Monitoring System

All approved Testing Equipment conducting official emission testing shall be equipped with video capturing equipment. An I/M Program Station will be in violation if the video capturing equipment is not properly maintained or installed and capturing images of each inspection. If video equipment is not fully operational, the I/M Program Station must contact the Contractor immediately for repair or replacement.

2.7 Inspection Restrictions Based on Current Calibrations

The Analyzer must:

- ◆ prevent TSI emissions inspections if the leak check has not passed in the last 24 hours;
- ◆ prevent TSI emissions inspections if the gas calibration has not passed in the last 72 hours;

The Testing Equipment must display appropriate error messages that indicate when a leak check or other calibration is needed to allow TSI inspections to be performed.

2.8 Running Changes and Other Hardware Modifications

Changes to design characteristics, component specifications, or any other modifications to the Testing Equipment hardware must be approved by the Department. The Contractor is responsible for confirming that such changes will have no detrimental effect on

performance of the Testing Equipment. The Department may require testing at approved beta test sites prior to the release of the modifications.

All proposed hardware modifications must be thoroughly tested by a third party before being submitted to the Department, and be accompanied by a cover letter containing the following information:

- Description of all of the proposed modifications to be performed, a parts list, and the installation instructions for the Contractor-authorized repair technician;
- Test data and an engineering evaluation regarding the effects of the proposed modification(s) on the performance and reliability of the Testing Equipment for any modifications to the bench or sample system;
- Timeline showing timeframe in which the modifications are expected to occur and the number of existing units of Testing Equipment that will be updated;
- Description of any special procedures that are needed to perform the hardware modifications; and
- Documentation for any software update that would be required for the proposed hardware modifications.

2.9 Exhaust Gas Analysis Equipment Specifications

This section defines the requirements for the components needed to determine the concentrations of the exhaust gases during the TSI inspections.

2.9.1 Measured Gases

The Analyzer must measure hydrocarbons (HC) as hexane in parts per million (ppm); carbon monoxide (CO); carbon dioxide (CO₂); and oxygen (O₂) in percent. The Analyzer must have a digital display for vehicle engine speed and exhaust concentrations of HC, CO, CO₂, and O₂ and must be capable of measuring exhaust concentrations of HC, CO, CO₂, and O₂ at a minimum sample rate of twice per second.

2.9.2 Warm-up Conditions

The Analyzer must reach stability within 30 minutes from startup at 35 degrees Fahrenheit (°F). The Analyzer must be considered warmed-up when the internal verifications are complete and the zero and span readings for HC, CO, CO₂, and O₂ have stabilized within the allowable accuracy values for five minutes without adjustment. If stabilization has not been reached within an allotted time frame, then the Analyzer must prevent TSI inspection sequences and display a message instructing the Certified Emissions Inspector to call for service. Functional operation of the gas sampling system must remain disabled through an internal lockout until the instrument meets stability and warm-up requirements.

2.9.3 Sampling System Components

A) General:

The sampling system must extract exhaust gas from a subject vehicle, remove particulate matter and aerosols from the sampled gas, drain the condensed water from the sample if necessary, and deliver the resultant gas sample to the Analyzer's sensors for analysis. The sampling system must, at a minimum, consist of a tailpipe probe, flexible sample line, continuously draining water removal system, particulate trap, sample pump, and flow control components. Provisions must be made for the introduction of zero air and calibration gases. Materials that are in contact with the gases sampled must not contaminate or change the composition of the gases to be analyzed, including gases from vehicles not fueled by gasoline. The system must be designed to be corrosion resistant and to withstand vehicle exhaust.

B) Sample Probe and Hose Criteria:

Sample hose must be 25 feet in length with a tolerance of ± 0.5 feet when measured from the front of the Analyzer cabinet. The hose must be composed of non-kinking material that will not be affected by or react to the exhaust gases. Sample hose and probe provided with each Analyzer must withstand exhaust gas temperatures at the probe tip of up to 1,100°F for 10 minutes. Use of dissimilar metals with thermal expansion factors of more than 5 percent must not be used in either the construction of probes or connectors.

A positive means of retention must be incorporated to prevent the probe from slipping out of the tailpipe when in use.

A thermally insulated securely attached hand grip must be provided on the probe to ensure easy probe insertion using one hand.

The probe must be designed so that the tip extends 16 inches into the tailpipe and at least 10 inches into the vehicle's exhaust.

The probe tip must be shielded to avoid inadvertent debris collection and sealed to prevent any sample dilution when it is inserted into the tailpipe. Use of a tailpipe extension is permitted as long as the extension does not change the exhaust back pressure by more than ± 1 inch of water pressure.

A straight probe tip must be provided that is bent less than 15 degrees, made of stainless steel solid wall tubing with a 3/16 inch outside diameter, and designed so the connector between the removable probe tip and the rigid portion of tubing is up inside the tailpipe at least three inches to reduce the effects of any leak that might occur.

A probe tip cap suitable for performing a leak check must be provided if the vacuum decay method for performing a leak check is used. Otherwise, all hoses and connectors that are necessary to perform a leak check must be provided.

The sample system must include equipment necessary to inspect vehicles equipped with dual exhaust pipes. The flow in each leg of the dual exhaust probe sample system must be equal.

C) Particulate Filter and Water Trap:

- The particulate filter must be capable of trapping 97 percent of all particulates and aerosols five microns or larger;
- The filter must not absorb or adsorb HC;
- The filter housing must be transparent to allow the operator to observe the filter's condition without removing the housing. The filter must be removable and reliably seal after replacement;
- The water trap must be sized to remove exhaust sample water from vehicles fueled with, or a combination of gasoline, propane, compressed natural gas (CNG), oxygenated fuels, and alternative fuels. The filter bowl, filter, and housing must not react to these fuels or the vehicle's exhaust gases. The condensed water must be continuously and sufficiently drained from the water trap's bowl to prevent condensation in the sample system or in the optical bench's sample cell; and
- Incorporate a back-purge system.

D) Low Flow Indicator:

The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that detects sample flow degradation. The Analyzer must display a low flow condition message when flow rate causes the measurement error for any gas to exceed 3 percent of the gas value used for calibration or audit or causes the analyzer response time to exceed 13 seconds to 90 percent of a step change in input, whichever is less. The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.

E) Analyzer lockout:

The Analyzer must lockout official TSI inspections when the sample flow is below the acceptable level. The Analyzer's sample system must be equipped with a flow meter or equivalent device that must indicate when sample flow degradation for any gas other than NO causes:

- The measurement error to exceed 3 percent of the gas value used for checking; or

- The Analyzer response time to exceed 13 seconds for a 90 percent step change in input.

The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.

3.0 Analyzer Requirements

3.1 Gas Calibration

A) General:

The Analyzer must automatically require and successfully pass a leak check and a gas calibration for HC, CO, CO₂, and O₂ by a method that is approved by the Department. The Analyzer must not allow an error of more than 2 percent of the readings using the high and low range span gases for TSI inspections. The Analyzer must automatically prohibit the performance of the tailpipe portion of the vehicle emissions inspection when readings exceed the 2 percent error tolerance. The Analyzer channels must be adjusted to the center of the allowable tolerance range as a result of the gas calibration procedure. The standard gases to be used to calibrate and audit the Analyzer must meet the requirements in the Federal Clean Air Act, §207(b) and described in Subpart W of Part 85 of Chapter I, Title 40 of the CFR. All standard gases purchased by the IM Program Station for use in the Analyzer must conform to the requirements established by the BAR for emissions inspection analyzer calibration gases and the National Institute of Standards and Technology (NIST).

B) Gas Calibration Procedure:

- The Analyzer must maintain accuracy between gas calibrations taking into account all errors, including noise, repeatability, drift, linearity, temperature, and barometric pressure;
- The Analyzer must automatically require a zero gas calibration and a high and low range gas calibration for HC, CO, CO₂, and O₂, where applicable. The Analyzer must record the gas reading data prior to the adjustment and other data pertinent to control charting Analyzer performance;
- The gas calibration must be accomplished by the following method: Calibration gases that meet the requirements of Section 3.1: Calibration Gases for TSI Analyzers must be introduced into the calibration port of the Analyzer. The pressure in the sample cell must be the same with the calibration gas flowing as with the sample flowing during an inspection. Once the pressure is the same, the Analyzer must perform a zero gas calibration and a leak check. The leak check must ensure that the entire sample system does not leak.

3.2 Calibration Gases for TSI Analyzers

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The following gases must be used for the two-point calibration and audit.

A) Low-Range Calibration Gas

HC = 200 ppm propane
CO = 0.5 percent
CO₂ = 6.0 percent
O₂ = Shop Air
N₂ = Balance 99.99 percent pure

B) High-Range Calibration Gas

HC = 3200 ppm propane
CO = 8.0 percent
CO₂ = 12.0 percent
O₂ = Shop Air
N₂ = Balance 99.99 percent pure

3.3 Dilution

The flow rate of the Analyzer must not cause more than 10 percent dilution during sampling of vehicle exhaust gases from a 1.6 liter engine at normal idle. Ten percent dilution is defined as a sample of 90 percent exhaust and 10 percent ambient air.

3.4 Calibration Prompts and Gas Usage

The Analyzer must display prompts to guide the inspector through the gas calibration procedure in a manner that minimizes the amount of gas used. The Analyzer must be designed to keep the loss of calibration gas to less than 0.5 liter in 24 hours when the valve on the calibration gas bottle is left open.

3.5 Propane Equivalency Factor

The value of the PEF must range from 0.490 to 0.540 and be displayed in a manner acceptable to the Department for each gas audit and gas calibration point. If an optical bench must be replaced in the field, then the Contractor-authorized repair technician must change any external labels to correspond to the PEF of the new bench. The Analyzer must incorporate an algorithm relating PEF to HC concentration. Corrections to the PEF must be made automatically and the corrected PEF value must range from 0.470 to 0.560.

APPENDIX F – WAIVERS FOR “NOT READY” VEHICLESaivers for “Not Ready” Vehicles

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A vehicle owner may be eligible for a Waiver when their gasoline powered vehicle is “Not Ready” and the following conditions are met:

- 1 The vehicle is not subject to a modified OBDII test because of OBD deficiencies;
- 2 The vehicle has an official test performed showing a “Not Ready” status. The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer.
- 3 A second inspection has been performed showing the following:
 - 3.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 3.2 The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles;
 - 3.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 3.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 4 A third inspection has been performed by a second repair station showing the following:
 - 4.1 Readiness monitors have not changed from “Not Ready” to “Ready”;
 - 4.2 The initial and third test dates are separated by at least 14 days and the vehicle has traveled a minimum of 400 miles;
 - 4.3 The MIL is functioning properly and is not commanded on. No pending codes are stored in the vehicle’s computer; and
 - 4.4 A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.
- 5 At least one of the statements must come from the vehicle manufacturer’s dealership repair station. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a “Ready” status. The dealership must also document that the vehicle’s computer is up to date and functioning properly. The computer must be updated if required or recommended by the manufacturer. If the computer is updated the vehicle must complete the appropriate drive cycles following the update.
- 6 The cost requirements as set forth by this Regulation must be met in order to qualify for a Waiver. In order to count labor the repair station must employ individuals with current ASE L1, ASE A8, or other certifications approved by the Department.

A vehicle owner may be eligible for a waiver when their vehicle is "Not Ready" and the following conditions are met:

- ~~1. The vehicle is not subject to a modified OBDII test because of OBD deficiencies.~~
- ~~2. The vehicle has an official test performed showing a Not Ready status. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
- ~~3. A second inspection has been performed showing the following:
 - ~~a. Readiness monitors have not changed from Not Ready to Ready.~~
 - ~~b. The test dates are separated by at least 7 days and the vehicle has traveled a minimum of 200 miles.~~
 - ~~c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
 - ~~d. A statement is included from a repair station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.~~~~
- ~~4. A third inspection has been performed by a second station showing the following:
 - ~~a. Readiness monitors have not changed from Not Ready to Ready.~~
 - ~~b. The initial and third test dates are separated by at least 14 days and the vehicle has travelled a minimum of 400 miles.~~
 - ~~c. The MIL is functioning properly and is not commanded on. No pending codes are stored on the vehicle computer.~~
 - ~~d. A statement is included from a second station, stating the appropriate diagnostics and manufacturer recommended drive cycles have been performed and the readiness monitors have not been set.~~~~
- ~~5. At least one of the statements must come from the vehicle manufacturer's dealership repair service. This statement must indicate that the appropriate drive cycles and diagnostics have been performed and the vehicle will not reach a Ready status.~~

Appendix G ~~Engine Switching~~

Bear River Health Department Regulation 2013-1 states:

~~“Engine switching shall be allowed only in accordance with EPA policy. Vehicles not meeting the requirements of Section 10.0 shall be deemed as tampered and are not eligible for a Certificate of Waiver, unless they are restored to the original engine and emission control configuration.”~~

- ~~1 Engine switching, if not done in accordance with EPA policy, is tampering.~~
- ~~2 A tampering inspection is not a component of the Cache County Emissions Program, except for 1998-2006 diesel vehicles and for any vehicle that applies for a waiver.~~
- ~~3 Engine switching shall be treated as follows:~~

~~Gas engine to gas engine~~

~~1995 and older vehicles The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~1996 and newer vehicles (8,500 lbs or less) The vehicle must pass the OBD test.~~

~~1996-2007 vehicles (greater than 8,500 lbs) The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~2008 and newer vehicles (greater than 8,500 lbs and less than 14,000 lbs) The vehicle must pass the OBD test.~~

~~2008 and newer vehicles (greater than 14,000 lbs) The vehicle must meet the cutpoint standards for the chassis model year and have a gas cap present.~~

~~Diesel engine to diesel engine~~

~~1997 and older vehicles These vehicles are exempt from testing requirements.~~

~~Vehicles greater than 14,000 lbs These vehicles are exempt from testing requirements.~~

~~1998-2006 vehicles (less than 14,000 lbs) These vehicles must have a visual inspection. All emissions control devices required for the engine must be in place.~~

~~2007 and newer vehicles (less than 14,000 lbs) The vehicle must pass the OBD test.~~

~~Gas engine to diesel engine~~

***DO NOT perform a two-speed idle test on these vehicles!**

~~1997 and older engine~~—The I/M Program Station will send the vehicle to the Vehicle Technical Center where it will be issued an exemption.

~~1998—2006 engine~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.

~~2007 and newer engine~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle must have all emissions control devices required for the engine.

~~———— Diesel engine to gas engine ————~~

~~1997 and older vehicle~~—These vehicles will likely be registered as diesel vehicle and will be exempt from testing requirements.

~~1998—2006 vehicles~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.

~~2007 and newer vehicles~~—The I/M Program Station will call the Vehicle Technical Center for guidance. The vehicle will undergo a TSI test and must meet the cutpoint standards for the engine model year and have a gas cap present.

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ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 52****EPA-R08-OAR-2014-0370; FRL-****Approval and Promulgation of Air Quality Implementation Plans; State of Utah; Motor Vehicle Inspection and Maintenance and Associated Revisions.****AGENCY:** Environmental Protection Agency.**ACTION:** Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving State Implementation Plan (SIP) revisions submitted by the State of Utah on January 10, 2013 and January 28, 2014. The revisions involve amendments to Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; the addition of Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County; and revisions to Utah Administrative Rules R307-110-1, R307-110-31, and R307-110-36. EPA is approving these SIP revisions in accordance with the requirements of section 110 of the Clean Air Act (CAA).

DATES: This final rule is effective [Insert date 30 days after publication].

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-R08-OAR-2014-0370. All documents in the docket are listed on the www.regulations.gov website. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the Air Program,

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Environmental Protection Agency (EPA), Region 8, 1595 Wynkoop Street, Denver, Colorado 80202-1129. EPA requests that if at all possible, you contact the individual listed in **FOR FURTHER INFORMATION CONTACT** section to view the hard copy of the docket. You may view the hard copy of the docket Monday through Friday, 8:00 a.m. to 4:00 p.m., excluding federal holidays.

FOR FURTHER INFORMATION CONTACT: Tim Russ, Air Program, EPA, Region 8, Mailcode 8P-AR, 1595 Wynkoop Street, Denver, Colorado 80202-1129, (303) 312-6479, russ.tim@epa.gov.

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I. Background

A. Utah's revisions to SIP section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

Section X of the Utah SIP addresses the provisions and requirements for the motor vehicle inspection and maintenance (I/M) programs that are administered by five counties in Utah. Section X of the SIP is divided into six subparts "A" through "F"; Part A addresses general requirements and applicability provisions that are common to each of the counties' I/M programs, Part B is the Davis County vehicle I/M program, Part C is the Salt Lake County vehicle I/M program, Part D is the Utah County vehicle I/M program, Part E is the Weber County vehicle I/M program, and Part F is the Cache County vehicle I/M program.

Section X, Part A is entitled "Vehicle Inspection and Maintenance Program, General Requirements and Applicability." The current version of Part A, last approved by EPA on November 2, 2005 (70 FR 66264), provides a discussion of the federal I/M requirements, the aspects of On-Board Diagnostics (OBD) tests, a brief history of the Utah I/M program and the state's general authority and general information regarding the applicability of the Utah SIP to such I/M program aspects as test frequency, enforcement, vehicle registration, and change in vehicle ownership. Although duplicative, each of the four counties' existing I/M programs, found in Parts B, C, D, and E to Section X, contained very similar language as provided in Part A.

By a letter dated January 10, 2013, the Governor of Utah submitted a revision to Section X, Part A that updates and expands Part A to contain the relevant brief history of the Utah I/M program, the state's general authority, additional language on test types, general public information, general enforcement provisions which are relevant to the four counties implementing an existing I/M program, and the new I/M program in Cache County. As Part A is

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applicable to all five of the counties' I/M programs, this allows the removal of the duplicative general language in existing Section X and allows the consolidation of the common information and provisions in each counties' I/M program into Part A. Each of the counties' I/M programs contained in Section X, Parts B through F will then reference Part A.

B. Utah's revisions to SIP section X, Vehicle Inspection and Maintenance Program, to add Part F, Cache County

On November 13, 2009 (74 FR 58688), EPA designated a portion of Cache County, Utah as nonattainment for the 2006 PM_{2.5}¹ 24-hour national ambient air quality standard (NAAQS). The Cache County portion includes the city of Logan, Utah. The nonattainment area, which also includes portions of Franklin County, Idaho, is identified by EPA as "Logan – UT/ID."

Through the course of the development of a dispersion modeled attainment demonstration for Utah's attainment plan, a motor vehicle I/M program was identified by the state as a reasonable control strategy to achieve reductions of PM_{2.5} precursor emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC) necessary to support the SIP attainment demonstration for the Cache County portion of the Logan–UT/ID 2006 PM_{2.5} 24-hour NAAQS nonattainment area. EPA notes, however, that under the applicable subparts of Part D of Title I of the CAA for PM_{2.5} attainment plans, subparts 1 and 4, Cache County's I/M program is not a CAA mandatory or required I/M program and is therefore not held to the same level of applicable requirements as found in 40 CFR part 51, subpart S (hereafter "40 CFR 51, subpart S"), I/M program requirements. As an example, a performance standard demonstration is not required for the Cache County I/M program. Part F of Section X, in conjunction with Section X, Part A as discussed above, was instead designed by the County and state to meet the minimum

¹ PM_{2.5} is Particulate Matter less than or equal to 2.5 microns in diameter.

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applicable I/M provisions and requirements presented in 40 CFR 51, subpart S. It is also noted in Part F that although only a portion of Cache County was designated as nonattainment for the 2006 PM_{2.5} 24-hour NAAQS, the I/M program will be implemented County-wide.

By a letter dated January 28, 2014, the Governor submitted a SIP revision to add Section X, Part F, for the new motor vehicle I/M program for Cache County. As described further below, the Cache County I/M program was designed with certain necessary components from 40 CFR 51, subpart S in order to have a viable I/M program that helps reduce NO_x and VOC precursor emissions of PM_{2.5}. The I/M program also generates emission reductions suitable for use in the PM_{2.5} attainment demonstration that was subsequently submitted by Utah to EPA on December 16, 2014.

C. Utah's revisions to Rules R307-110-1, R307-110-31, and R307-110-36

The Utah Administrative Code is the body of all effective administrative rules as compiled and organized by the Utah Division of Administrative Rules, Utah Department of Administrative Services.² Utah's Administrative Rules are a portion of Utah's Codified Law. In Utah, statements written by state agencies which have the effect of law are called administrative rules. Unlike state [[HYPERLINK "http://le.utah.gov/UtahCode/title.jsp"](http://le.utah.gov/UtahCode/title.jsp)], which change only when the Utah Legislature is in session, administrative rules change throughout the year. A Utah administrative rule serves at least two purposes; first, an enacted administrative rule has the binding effect of law, and second, an administrative rule informs citizens of actions a state government agency will take or how a state agency will conduct its business. Under the authority of the Utah Air Conservation Act as provided in Utah Code Title 19, Chapter 2, the Utah Air Quality Board (UAQB) adopts certain provisions and requirements into the Utah SIP. Those

² For further information and citations to the relevant Utah statutes that govern rulemaking, please refer to the website of the Division of Administrative Rules: [[HYPERLINK "http://www.rules.utah.gov/"](http://www.rules.utah.gov/)] .

particular SIP elements must then be incorporated by reference into the appropriate section of the Utah Administrative Rules (hereafter “Utah Rules”).

By letters dated January 10, 2013 and January 28, 2014, the Governor submitted SIP revisions involving updates to sections of the R307-110 series air quality Utah Rules. The Governor’s submittals requested EPA to approve actions taken by the UAQB that updated three sections of the Utah Rules R307-110 series which are entitled “General Requirements: State Implementation Plan.” The three rules are:

1. R307-110-1 which incorporates by reference the Utah SIP into the Utah Rules and advises the public that the SIP is available on the Utah Division of Air Quality (UDAQ) website.
2. R307-110-31 which incorporates by reference Utah SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.
3. R307-110-36 which incorporates by reference Utah SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

D. Proposed rule.

On November 10, 2014, EPA published a proposed rule in the Federal Register (see 79 FR 66670) in which we fully described and proposed approval of the SIP revisions discussed above. Our proposed rule provided an opportunity for public comment through December 10, 2014. We did not receive any comments in response to our November 10, 2014 proposed rule.

II. What Was the State’s Process?

Section 110(a)(2) of the CAA requires that a state provide reasonable notice and public hearing before adopting a SIP revision and submitting it to us.

A. The Governor’s January 10, 2013 SIP submittal

On October 15, 2012, October 16, 2012, and October 17, 2012 the UAQB of the Utah

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Department of Environmental Quality conducted public hearings to consider the adoption of revisions and additions to the Utah SIP and the appropriate sections of the Utah Rules. The revisions affecting the SIP involved SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County; and Utah Rules R307-110-1, R307-110-31, and R307-110-36. After reviewing and responding to comments received before and during the public hearings, the UAQB adopted the proposed revisions on December 5, 2012. The SIP and Utah Rule revisions became state effective on December 6, 2012 and were submitted by the Governor to EPA by a letter dated January 10, 2013. By a subsequent letter dated February 25, 2013, Bryce Bird, Director, UDAQ submitted the necessary administrative documentation that supported the Governor's submittal.

We evaluated the Governor's January 10, 2013 submittal for SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability; SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County; and Rules R307-110-1, R307-110-31, and R307-110-36 and determined that Utah met the requirements for reasonable notice and public hearing under section 110(a)(2) of the CAA. By operation of law under section 110(k)(1)(B) of the CAA, the Governor's January 10, 2013 submittal was deemed complete on July 10, 2013.

B. The Governor's January 28, 2014 SIP submittal

On August 7, 2013 the UAQB proposed for public comment amendments to the Utah SIP for Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County and Utah Rule R307-110-36. These proposed revisions superseded and replaced those previous revisions to the SIP for Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

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and Utah Rule R307-110-36 that the Governor had submitted to EPA with his letter to EPA dated January 10, 2013. Included with the state's administrative documentation for these SIP and Rule revisions were letters dated October 23, 2013 and October 24, 2013 from Bryce Bird, Director, UDAQ, to the UAQB. Both of these letters indicated that a public comment period was held from September 1 through October 1, 2013, regarding the proposed Cache County I/M program (ref. October 24, 2013 letter) and Utah Rule R307-110-36 (ref. October 23, 2013 letter) revisions, and that no public comments were received and no public hearings were requested. In consideration of these two letters, the UAQB subsequently adopted the proposed revisions on November 6, 2013. The SIP and Rule revisions became State effective on November 7, 2013, and were submitted by the Governor to EPA by a letter dated January 28, 2014. By a subsequent letter dated February 4, 2014, Bryce Bird, Director, UDAQ submitted the necessary administrative documentation that supported the Governor's submittal.

We evaluated Utah's January 28, 2014 submittal and determined that the State met the requirements for reasonable notice and public hearing under section 110(a)(2) of the CAA. By a letter dated June 30, 2014, we advised the Governor that the SIP and Rule revisions submittal was deemed to have met the minimum "completeness" criteria found in 40 CFR part 51, Appendix V.

III. EPA's Evaluation of the State's Revisions to Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

As noted in section I of this action, Section X of the Utah SIP addresses the provisions and requirements for the motor vehicle I/M programs administered by five counties in Utah. Section X of the SIP is divided into six subparts, "A" through "F," with Part A addressing general requirements and applicability provisions that are common to each of the counties' I/M

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programs. Section X, Part A is entitled “Vehicle Inspection and Maintenance Program, General Requirements and Applicability,” and its current provisions and requirements, as updated by the Governor’s SIP submittal of January 10, 2013, are discussed below:

A. Utah SIP Section X, Part A: “Requirements.”

We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section IV of our proposed rule which is entitled “IV. EPA’s Evaluation of the State’s Revisions to Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.” Please see page 79 FR 66672.

B. Utah SIP Section X, Part A: “General Applicability.”

We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section IV of our proposed rule which entitled “IV. EPA’s Evaluation of the State’s Revisions to Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.” Please see pages 79 FR 66672 and 66673.

C. Utah SIP Section X, Part A: “General Summary.”

We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section IV of our proposed rule which entitled “IV. EPA’s Evaluation of the State’s Revisions to Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.” Please see page 79 FR 66673.

Based on EPA’s review of Utah’s revisions to SIP Section X, Vehicle Inspection and Maintenance Program, Part A, Requirements, General Applicability, and General Summary and

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in consideration of our full analysis as provided in our proposed rule of November 10, 2014 (79 FR 66670), we have concluded that our approval is warranted. As noted in our November 10, 2014 proposed rule, this conclusion incorporates our review of our prior approval of this section of the SIP (see 70 FR 66264, November 2, 2005) and the applicable sections of 40 CFR 51, subpart S (sections 51.350 to 51.373). We have determined that the revisions to Section X, Vehicle Inspection and Maintenance Program, Part A, Requirements, General Applicability, and General Summary sufficiently address the applicable sections of 40 CFR 51, subpart S for these particular aspects of Utah's five counties' I/M programs. We, therefore, are approving these revisions to the SIP.

IV. EPA's Evaluation of the State's Revisions to Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County

Section X, Part F of the Utah SIP addresses the provisions and requirements for the implementation of the motor vehicle I/M program in Cache County, Utah. Section X, Part F of the SIP contains three main components for the Cache County I/M program: (a.) the SIP language for Section X Part F that addresses applicability, a general description of the Cache County I/M program, and the time frame for implementation of the I/M program; (b.) the Cache County Emission Inspection/Maintenance Program Ordinance 2013-4; and (c.) the Bear River Health Department's Regulation 2013-1. We note that the Cache County Ordinance 2013-4 contains language which delegates the implementation of the Cache County I/M program to the Bear River Health Department (BRHD). All of the above documents were adopted by the UAQB on November 6, 2013 and were included with the Governor's SIP submittal of January 28, 2014. The documents were supplemented by the February 4, 2014 UDAQ submittal of the administrative documentation and are discussed in further detail below.

A. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County;

Applicability, Description of the Cache County I/M Program, and I/M SIP Implementation:

1. *Applicability.* We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section V of our proposed rule which entitled “V. EPA’s Evaluation of the State’s Revisions to Section X, Part F, Cache County Vehicle Inspection and Maintenance Program.” Please see page 79 FR 66674.

2. *Description of Cache County I/M Program.* We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section V of our proposed rule which is entitled “V. EPA’s Evaluation of the State’s Revisions to Section X, Part F, Cache County Vehicle Inspection and Maintenance Program.” Please see page 79 FR 66674. Our evaluation discussed components of the Cache County’s I/M program involving such aspects as; *Network Type, Test Convenience, Subject fleet, Station/inspector Audits, Waivers, Test frequency, Test Equipment, and Test Procedures.*

3. *I/M SIP Implementation.* Our proposed rule of November 10, 2014 (79 FR 66670) noted on page 79 FR 66674 that the SIP states the following to address I/M implementation: “The I/M program ordinance, regulations, policies, procedures, and activities specified in this I/M SIP revision shall be implemented by January 1, 2014 and shall continue until a maintenance plan without an I/M program is approved by EPA in accordance with Section 175 of the Clean Air Act.”

B. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County; Appendix 1, Cache County Emission Inspection/Maintenance Program Ordinance 2013-4:

We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section V of our proposed rule which is entitled “V. EPA’s Evaluation of the State’s Revisions to Section X, Part F, Cache County Vehicle Inspection and Maintenance Program.” Please see page 79 FR 66674. Our evaluation discussed components of the Cache County’s I/M program involving such aspects as: Section 1, *Purpose*; section 2, *Powers and Duties*; section 3, *General Provisions*; section 4, *Guidelines to be Followed by the Bear River Board of Health in Implementing a Vehicle Emission Inspection and Maintenance Program in Cache County*; section 5, *Review of Need for Program*; and section 6, *Effective Date*. Of particular note is section 2.3, which delegates implementation of the I/M program to the BRHD, and section 4, which sets several of the parameters for BRHD’s program implementation, including test schedules, fees, and waivers.

C. Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County; Appendix 2, Bear River Health Department Regulation 2013-1:

This section of the SIP provides the BRHD’s I/M regulation. The Cache County I/M program is not a CAA mandated program and is, therefore, allotted a certain amount of flexibility in the level of applicable requirements as compared to a CAA or otherwise required mandatory I/M program. The purpose of the Cache County I/M program is to achieve reductions in PM_{2.5} NAAQS precursor emissions of NO_x and VOCs, to improve air quality, and to provide emission reductions for use in a dispersion modeled SIP attainment demonstration. To facilitate these objectives, EPA’s analysis of the BRHD’s Regulation 2013-1 included a comparison of the BRHD’s Regulation 2013-1 to applicable sections of 40 CFR 51, subpart S

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“Inspection/Maintenance Program Requirements.” EPA’s analysis of the BRHD’s Regulation 2013-1 was accomplished as described below.

EPA reviewed the BRHD’s Regulation 2013-1 for consistency with appropriate sections of the federal I/M regulations, as applicable to a non-mandatory I/M program, as codified in 40 CFR 51, subpart S, sections 51.350 through 51.373. We provided a full analysis of the revisions to this section of the SIP in our proposed rule of November 10, 2014 (79 FR 66670). For the specific discussion, the reader is directed to section V of our proposed rule which entitled “V. EPA’s Evaluation of the State’s Revisions to Section X, Part F, Cache County Vehicle Inspection and Maintenance Program.” Please see pages 79 FR 66674 through 66678. Our evaluation discussed components of Cache County’s I/M program, with specific references to the particular sections of the BRHD’s Regulation 2013-1 and how they appropriately addressed the applicable federal requirements including: 40 CFR 51.350 - Applicability; 40 CFR 51.351 - Enhanced I/M Performance Standard and 40 CFR 51.352 - Basic I/M Performance Standard; 40 CFR 51.353 - Network Type; 40 CFR 51.354 - Adequate Tools and Resources; 40 CFR 51.355 - Test Frequency and Convenience; 40 CFR 51.356 - Vehicle Coverage; 40 CFR 51.357 - Test Procedures and Standards; 40 CFR 51.358 - Test Equipment; 40 CFR 51.359 - Quality Control; 40 CFR 51.360 - Waivers; 40 CFR 51.361 - Motorist Compliance Enforcement; 40 CFR 51.362 - Motorist Compliance Enforcement Program Oversight; 40 CFR 51.363 - Quality Assurance; 40 CFR 51.364 - Enforcement Against Contractors, Stations, and Inspectors; 40 CFR 51.365 - Data Collection; 40 CFR 51.366 - Data Analysis and Reporting; 40 CFR 51.367 - Inspector Training and Licensing or Certification; 40 CFR 51.368 - Public Information and Consumer Protection; 40 CFR 51.369 - Improving Repair Effectiveness; 40 CFR 51.370 - Compliance with Recall

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Notices; 40 CFR 51.371 - On-road Testing; 40 CFR 51.372 - State Implementation Plan Submittals; and 40 CFR 51.373 - Implementation Deadlines.

D. Conclusion: Our review, as presented in our November 10, 2014 proposed rule (79 FR 66670) and reiterated herein, involved: (1.) Section X, Part F, Vehicle Inspection and Maintenance Program, (2.) Section X, Part F, Appendix 1, which is the Cache County Ordinance 2013-4, and (3.) Appendix 2, which is the BRHD's Regulation 2013-1, all as compared to the applicable provisions of 40 CFR 51, subpart S for a non-mandatory I/M program. Based on our review, we have determined that the SIP revisions sufficiently address the applicable provisions in 40 CFR 51, subpart S for a non-mandatory I/M program and that our approval is warranted. We are, therefore, approving the Cache County I/M program as described and authorized in Section X, Vehicle Inspection and Maintenance Program, Part F, which includes Appendix 1 which is the Cache County Ordinance 2013-4, and Appendix 2 which is the BRHD's Regulation 2013-1.

E. Special Consideration of the Diesel I/M Provisions in the BRHD's Regulation 2013-1.

As we discussed in our proposed rule (79 FR 66670, November 10, 2014), the Cache County I/M program is not a CAA mandatory or otherwise required I/M program. EPA takes note of the provisions in the BRHD's Regulation 2013-1, Section 9.4.6, which states that "[a]ll diesel powered vehicles model year 1998 and newer shall be tested as specified in Appendix D, Diesel Test Procedures." Appendix D of Regulation 2013-1 is entitled "Test Procedures" and contains test procedures for OBDII, Two Speed Idle (TSI), and for Diesel Powered Vehicles.

At this time, EPA has not promulgated specific I/M requirements for diesel I/M programs. We have, to date, only issued policy guidance regarding the gathering of OBD

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information from OBD-equipped diesel vehicles.³ As such, we do not have regulatory language in 40 CFR 51, subpart S to compare the diesel I/M requirements in the BRHD's Regulation 2013-1 for potential SIP approval and SIP credit. However, EPA does believe the above noted diesel I/M provisions in the BRHD's Regulation 2013-1 have potential merit for evaluating diesel vehicles and for reducing emissions from diesel vehicles. We are therefore also approving the diesel I/M provisions in the BRHD's Regulation 2013-1; however, our approval is only for the purposes of strengthening the SIP and we are not approving the provisions as a diesel I/M program nor assigning any SIP credit.

V. EPA's Evaluation of the State's Associated Revisions to Utah Rules R307-110-1, R307-110-31, and R307-110-36

A. Revisions to Utah Rule R307-110-1; Incorporation by Reference.

As discussed in our proposed rule of November 10, 2014 (79 FR 66670), the purpose of the revisions to R307-110-1 is to incorporate by reference the Utah SIP into this section of the Utah Administrative Rules and to advise the public that the SIP is available on the UDAQ's website. EPA finds this an administrative revision that merely incorporates the Utah SIP into the State's Rules, which are a portion of Utah's Codified Law, along with providing the public information that the SIP can be accessed via the internet on the UDAQ's website. The revisions to R307-110-1 were adopted by the UAQB on December 5, 2012, became state-effective on December 6, 2012, and were as submitted by the Governor by a letter dated January 10, 2013. By a subsequent letter dated February 25, 2013, Bryce Bird, Director, UDAQ, submitted the necessary administrative documentation that supported the Governor's submittal.

³ See EPA Office of Transportation and Air Quality: "Best Practices for Addressing OBD Readiness in IM Testing of Diesel Vehicles Under 14,000 Pounds Gross Vehicle Weight Rating," March 07, 2013.

B. Revisions to Utah Rule R307-110-31; Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

As discussed in our proposed rule of November 10, 2014 (79 FR 66670), the purpose of the revisions to R307-110-31 is to incorporate by reference into the Utah Rules, SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as adopted by the UAQB on December 5, 2012, and which became state-effective on December 6, 2012. The revisions to SIP Section X, Part A, were those as we discussed above in sections I, II, and III of this action, and in our proposed rule, and were as submitted by the Governor by a letter dated January 10, 2013. By a subsequent letter dated February 25, 2013, Bryce Bird, Director, UDAQ, submitted the necessary administrative documentation that supported the Governor's submittal.

C. Revisions to Utah Rule R307-110-36; Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County.

As discussed in our proposed rule of November 10, 2014 (79 FR 66670), the purpose of the revisions to R307-110-36 is to incorporate by reference into the Utah Rules, SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, as initially adopted by the UAQB on December 5, 2012, and as superseded by the revisions as adopted by the UAQB on November 6, 2013. Those revisions that were adopted by the UAQB on November 6, 2013, became State-effective on November 7, 2013, and are the revisions to SIP Section X, Part F that we discussed above in sections I, II, and IV of this action and in our proposed rule. The November 7, 2013, effective revisions were submitted by the Governor by a letter dated January 28, 2014 and were supported by a subsequent letter, dated February 4, 2014, from Bryce Bird, Director, UDAQ, which submitted the necessary administrative documentation.

The revisions to Utah Rules R307-110-1, R307-110-31, and R307-110-36, as discussed in our proposed rule (79 FR 66670, November 10, 2014) and herein, incorporate by reference the applicable SIP revisions into the Utah Administrative Rules which then codifies them in the Utah Administrative Code. This is acceptable to EPA and we are, therefore, approving these SIP revisions to Utah Rules R307-110-1, R307-110-31, and R307-110-36.

VI. Consideration of Section 110(l) of the Clean Air Act

Section 110(l) of the CAA states that a SIP revision cannot be approved if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress towards attainment of a NAAQS or any other applicable requirement of the CAA. The provisions of Utah SIP Section X, Part A contain I/M provisions that were previously approved by EPA and were also simultaneously contained in the Utah's SIP Section X for each of the county's I/M programs (i.e., Part B, Part C, Part D, and Part E). The SIP revisions to Section X, Part A do not weaken the previously approved requirements and provisions in Section X, Part A of the SIP, nor do they reduce the emission reductions achieved by the original program areas. Instead, the revisions to SIP Section X, Part A reorganize and expand the existing requirements and provisions, to reflect the redundant language that previously appeared in Parts B, C, D, and E, and to expand SIP Section X, Part A to include the Cache County I/M program (Part F). The revisions to SIP Section X, Part F incorporate a new I/M program for Cache County that will help to reduce PM_{2.5} precursor emissions of NO_x and VOCs. The revisions to Utah Rules R307-110-1, R307-110-31, and R307-110-36 merely incorporate by reference the applicable SIP revisions into the Utah Administrative Rules which then codifies them in the Utah Administrative Code. In view of the above, EPA finds that the revisions to Utah SIP Section X, Part A, Utah SIP Section X Part F, and Utah Rules R307-110-1, R307-110-31, and R307-110-36

will not interfere with attainment, reasonable further progress, or any other applicable requirement of the CAA.

VII. Final Action

EPA is approving the January 10, 2013 submitted SIP revisions to Utah's SIP Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, and to Utah Rules R307-110-1 and R307-110-31. In addition, EPA is approving the January 28, 2014 submitted SIP revisions to Utah's SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, with clarification below, and to Utah Rule R307-110-36.⁴ EPA clarifies that with its approval of Utah's SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County, Appendix 2, the provisions in the BRHD's Regulation 2013-1, Section 9.4.6 and the diesel test procedures as specified in BRHD's Regulation 2013-1, Appendix D are being approved only for purposes of strengthening the SIP. These provisions are not being approved as a diesel I/M program and are not being assigned any SIP credit.

VIII. Incorporation by Reference

In this rule, the EPA is finalizing regulatory text that includes incorporation by reference. In accordance with the requirements of 1 CFR 51.5, EPA is finalizing the incorporation by reference of the Utah SIP materials and rules described in the amendments to 40 CFR part 52 set forth below. The EPA has made, and will continue to make, these documents generally available electronically through [HYPERLINK "http://www.regulations.gov"] and/or in hard copy at the

⁴ In the February 25, 2013 letter from Bryce Bird, Utah proposed to renumber Utah Rule R307-110-36, Section XXIII, Interstate Transport to Utah Rule R307-110-37. EPA plans to take action on that request in a different rulemaking. By approving R307-110-36, Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County in this action, EPA is not superseding or removing R307-110-36, Section XXIII, Interstate Transport from the federally-enforceable SIP.

appropriate EPA office (see the ADDRESSES section of this rule's preamble for more information).

IX. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Clean Air Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.);
- is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.);
- does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);

[PAGE * MERGEFORMAT]

- is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

The Congressional Review Act, 5 U.S.C. section 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

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Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by [**Insert date 60 days from date of publication of this document in the Federal Register**]. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See CAA section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, and Volatile organic compounds.

Authority: 42 U.S.C. 7401 et seq.

July 1, 2015.

Shaun L. McGrath,
Regional Administrator,
Region 8.

[PAGE * MERGEFORMAT]

40 CFR part 52 is amended to read as follows:

PART 52 [AMENDED]

1. The authority citation for Part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart TT - Utah

2. Section 52.2320 paragraph (c) is amended by adding paragraph (80) to read as follows:

52.2320 Identification of plan.

* * * * *

(c) * * *

(80)

Revisions to the Utah State Implementation Plan involving Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, and Utah Rules R307-110-1 and R307-110-31. The Utah Air Quality Board (UAQB) adopted these SIP revisions on December 5, 2012, they became state effective on December 6, 2012, and were submitted by the Governor to EPA by a letter dated January 10, 2013. In addition, revisions to the Utah State Implementation Plan involving; Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County and Utah Rule R307-110-36 were submitted for Agency action. These SIP revisions were adopted by the UAQB November 6, 2013, they became State effective on November 7, 2013, and were submitted by the Governor to EPA by a letter dated January 28, 2014.

(i) Incorporation by reference.

(A) Utah Rules R307, Environmental Quality, Air Quality, R307-110, General Requirements: State Implementation Plan, R307-110-1, Incorporation by Reference; R307-110-31, Section X,

[PAGE * MERGEFORMAT]

Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability;
and, Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program
Part A, General Requirements and Applicability. Effective December 6, 2012, as proposed in the
Utah State Bulletin on October 1, 2012 and published on January 1, 2013 as adopted.

(B) Utah Rule R307, Environmental Quality, Air Quality, R307-110, General Requirements:
State Implementation Plan, R307-110-36, Section X, Vehicle Inspection and Maintenance
Program, Part F, Cache County; and, Utah State Implementation Plan, Section X, Vehicle
Inspection and Maintenance Program Part F, Cache County. Effective November 7, 2013, as
proposed in the Utah State Bulletin on September 1, 2013 and published on December 1, 2013 as
adopted.

* * * * *

Utah SIP Section X, Part A and Part F TSD

Utah Code Annotated 41-6a-1642 gives authority to each county in the state of Utah to design and manage a vehicle inspection and maintenance (I/M) program when the county is required to attain and maintain any NAAQS. Section X incorporates these county programs into the Utah SIP. Section X, Part A summarizes the I/M requirements that are common among all I/M programs. Section F contain the requirements for the Cache County I/M program. Below we discuss the revisions made to Utah SIP Section X, Part A and Part F, R307-110-31, and R307-110-36, along with our evaluation.

R307-110-31

Section R307-110-31 incorporates the amendments to Utah SIP Section X. Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability in state rules, thereby making them effective as a matter of state law. This is a ministerial provision, which only revises the effective date within the rule to September 4, 2019 and does not by itself include any control measures.

R307-110-36

Section R307-110-36 incorporates the amendments to Utah SIP Section X, Vehicle Inspection and Maintenance Program, Part F, Cache County into state rules, thereby making them effective as a matter of state law. This is a ministerial provision, which only revises the effective date within the rule to September 4, 2019 and does not by itself include any control measures.

Subsection X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

The revisions to “Part A, General Requirements and Applicability” include additions to section “1. General Requirements” that address revisions to Utah Code Annotated (UCA) Section 41-6a-1642 involving:

a. An amendment in 2013 to include the date that notice is required and the date the enactment, change, or repeal will take effect if a county legislative body enacts, changes, or repeals the local emissions compliance fee. Section 41-6a-1642 provides that for a county required to implement a new vehicle emissions I/M program, but for which no current federally approved SIP exists, a vehicle shall be tested at a frequency determined by the county legislative body, in consultation with the Utah Air Quality Board (UAQB), that is necessary to comply with federal law or attain or maintain any NAAQS and establishes procedures and notice requirements for a county legislative body to establish or change the frequency of a vehicle emissions I/M program;

b. An amendment in 2017 to UCA Section 41-6a-1642 to allow a county that imposes a local emissions compliance fee to use revenue generated from the fee to promote programs to maintain a NAAQS. At that time the Utah Legislature also amended 41-6a-1642 to state that vehicles may not be denied registration based solely on the presence of a defeat device covered in the Volkswagen partial consent decrees or an EPA-approved vehicle emission modification; and

c. An amendment in 2019 regarding “Notification of Programmatic Changes.” This requires that the legislative body of a county, as identified in UCA 41-6a-1642, consult with the Director of the Utah Division of Air Quality (UDAQ) before their public comment process for any amendments to their I/M regulations or ordinances. Consultation is to include a written notice describing the proposed changes to the I/M program.

The revisions to Part A (General Requirements and Applicability) also included changes to section 3 (General Summary) that addressed minor wording clarifications to the subsections entitled “*Out-of-state exemption*” and “*Vehicle inspection report.*”

We have evaluated the Governor’s November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part A and are proposing approval.

Subsection X, Vehicle Inspection and Maintenance Program, Part F, Cache County

Section X, Part F of the Utah SIP addresses requirements for the implementation of the motor vehicle I/M program in Cache County, Utah. Section X, Part F of the SIP contains three main components for the Cache County I/M program: (1) the SIP language for Section X, Part F, that addresses applicability, a general description of the Cache County I/M program, and the time frame for implementation of the I/M program; (2) the Cache County Emission Inspection/Maintenance Program Ordinance 2018-15; and (3) the Bear River Health Department’s (BRHD) Regulation 2013-04. We note that the Cache County Ordinance 2018-15 contains language which delegates the implementation of the Cache County I/M program to the BRHD.

Under the heading “1. Applicability,” the revisions to the Cache I/M program note that the Cache I/M program was approved by the EPA on October 9, 2015 (80 FR 54237), and that the I/M program has been fully implemented.

Under the heading “2. Description of Cache I/M programs,” the revisions to the Cache I/M program include:

(1) “*Subject Fleet*”: The subject fleet for an I/M inspection was changed from 1969 and newer to 1996 and newer. This change reflects the County’s revision to its I/M program to remove the Two Speed Idle (TSI) test for vehicles 1995 and older.

(2) “*Test Frequency*”: This section was also revised to reflect that model year 1996 and newer vehicles are subject to a biennial I/M test. This revised language also shows the removal of a required I/M test for 1995 and older vehicles.

(3) “*Test Equipment*”: This section was modified to remove the phrase “Analyzer calibration specifications” and replace it with “Certified testing equipment.”

(4) “*Test Procedures*”: This section was revised to remove the TSI test for 1995 and older vehicles and to remove the County’s TSI test for 1996 to 2007 medium-duty vehicles and 2008 and newer heavy-duty vehicles.

Under the heading “3. I/M SIP Implementation,” the revisions to the Cache I/M program note that the I/M program ordinance, regulations, policies, procedures, and activities specified in the I/M SIP revision shall be implemented by January 1, 2021.

We have evaluated the Governor’s November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part F and are proposing approval.

Revisions to Cache County’s Ordinance 2013-04 (Implementation of a Vehicle Emissions and Maintenance Program in Cache County). The revisions involved:

(a) Revisions to the table of contents that reflect the removal of the TSI test in 2021, and subsequent subsections renumbering;

(b) Revisions to section 1.0 (Definitions) to remove several definitions and to modify and add several definitions;

(c) Revisions to section 2.0 (Purpose) to clarify that the ordinance complies with applicable federal requirements and with Cache County Code Chapter 10.20;

(d) Revisions to section 3.0 (Authority and Jurisdiction of the Department) to revise subsections to indicate the authority is as per Cache County Code Chapter 10.20 and its subdivisions;

(e) Revisions to section 4.0 (Powers and Duties) to remove unneeded references to Technical Bulletins and to include “Certified Testing “Equipment” in place of “testing equipment;”

(f) Revisions to section 5.0 (Scope) to remove the unneeded reference to Technical Bulletins;

(g) Revisions to section 6.0 (General Provisions) to update the applicability to vehicles registered in Cache County or principally operated there; adding references to Cache County Code Chapter 10.20 and its applicable subdivisions; updating the reference to Utah Administrative Code (UAC) Section 41-6a-1642(10); revising the list of vehicles that are exempted from I/M testing; clarifying the required I/M testing station signs; inserting a new “Compliance Assurance List” section 6.8 with its requirements;

(h) Revisions to section 7.0 (Permit Requirements of the Vehicle Emissions I/M Program Station) removed unneeded language relevant to TSI testing and adding language that a wireless internet connection may be required;

(i) Revisions to section 8.0 (Training and Certification of Inspectors) added “Certified Testing Equipment” where “test equipment” previously appeared. The revisions also removed unneeded language relevant to TSI testing and the unneeded requirement for a “hands on” test. The revisions added language in new section 8.4.3 that an emission inspection certificate would not be issued to an inspector applying in Cache County who has a revoked or suspended certificate in another county;

(j) Revisions to section 9.0 (Inspection Procedure) remove most of the inspection procedures from this section and place them instead in the revised Appendix D. “Test Procedures.” In addition, language relating to the TSI test was removed and clarifying language referencing a “Certified Emissions Inspector” and “Certified Testing Equipment” has been added. Other revisions were made regarding “Waivers,” emissions related repairs, and language in the new section 9.6 regarding the exploration of new emission inspection technologies that would be vetted with, and approved by, Cache County, the state, and the EPA;

(k) Revisions to section 10.0 (Engine Switching) involve clarification of the term “EPA policy” by including the reference to the specific EPA policy (i.e., the EPA’s March 1991 engine switching Fact Sheet and its September 1997 Memorandum 1a) and language clarifying the requirements that a vehicle with an engine that was switched meet the emission inspection requirements of Section 6.0;

(l) Revisions to section 11.0 (Specifications for Certified Testing Equipment) remove previously applicable requirements for calibration gases, gas calibration with leak checks, and warranty and maintenance requirements, as these provisions were only applicable to the TSI test;

(m) Revisions to section 12.0 (Quality Assurance) update references to “Certified Testing Equipment;”

(n) Revisions to prior section 13.0 (Cutpoint Standards for Motor Vehicle Exhaust Gases) remove this section, as it was only applicable to the TSI test;

(o) Revisions to renumbered section 13.0 (Disciplinary Penalties and Right to Appeal) renumber of the subsections and replace of the term “audit” with “inspection;”

(p) Revisions to renumbered section 14.0 (Penalty) involved the renumbering of the prior subsections to a new subsection 14.6 that states the Department shall request that the Utah Division of Motor Vehicles (DMV) revoke the registration of any vehicle that is unable to meet the required emissions standards or has not complied with the required emissions testing requirements of UAC Section 41-1a-110(6);

(q) Revisions to renumbered section 15.0 (Severability) only involve the renumbering of the section;

(r) Revisions to renumbered section 16.0 (Effective Date) involve the renumbering of the section and change from the prior effective date of May 27, 2015 to January 1, 2021;

(s) Revisions to “Appendix A” only remove the reference to the fee for a TSI test;

(t) Revisions to “Appendix B” remove Appendix B in its entirety, as it related to motor vehicle emissions cut-points applicable to the TSI test. As the TSI test was removed from the ordinance, this prior Appendix B is no longer relevant and was removed. The Appendix is now titled as “Reserved;”

(u) Revisions to “Appendix D” involve the relocation of most of the On-Board Diagnostic (OBD) testing procedures to Appendix D that were previously located in section “9.0 Inspection Procedure.” Additional language, regarding the OBD test procedures, was included that clarifies, updates, and supplements the prior OBD test procedures language in the prior Appendix D. Terms were updated to refer to “Certified Emissions Equipment” and “Certified Emissions Inspector.” Provisions were added for a “Compliance Assurance Inspection” for a vehicle and a “Referee Inspection” at the County’s I/M Technical Center for

vehicles having difficulty with the OBD test, and also for when vehicle owner believes the emission test done at an inspection station was not done correctly. The prior Appendix D test procedures for the TSI were removed;

(v) Revisions to “Appendix E” involved the removal of “Technical Specifications and Calibration Gas” from the Appendix title. All provisions and requirements for the TSI test were removed. Only the necessary provisions and requirements for the OBD test were retained and updated;

(w) Revisions to “Appendix F” include clarifications to the provisions for the second and third tests, additional language regarding statements about the vehicle from the vehicle manufacturer’s dealership repair station, and a new item number 6 addressing cost requirements for a waiver; and

(x) Revision to “Appendix G” was the removal of Appendix G in its entirety. The revised, allowable engine switching provisions were incorporated into section 10.0 above section 10.0 “Engine Switching.”

We have evaluated the Governor’s November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part F and are proposing approval.

The revisions to Cache County’s Ordinance 2013-04 (Implementation of a Vehicle Emissions and Maintenance Program in Cache County) for the removal of the TSI test in 2021.

In December 2018, the BRHD proposed to the Cache County Council to amend the Cache County vehicle emissions and maintenance program. The BRHD proposal was to discontinue the TSI test for vehicles 1995 and older due to a diminishing fleet of older light duty gasoline vehicles participating in the program, combined with increasing cost of maintaining the TSI testing equipment. The emission reductions benefit from these older vehicles was minimal

compared to the resources required to operate the TSI test, and removal of the TSI test would not interfere with attainment and maintenance of the 2006 PM_{2.5} 24-hour NAAQS.

The Cache County Council passed the proposal to discontinue the TSI program with an effective date of January 1, 2021. This effective date is reflected as part of the revisions to Ordinance 2013-04 discussed above. The TSI testing program covers light duty gasoline vehicles that are older than model year 1995 and was a component of the I/M control strategy used in the EPA-approved Logan, UT-ID PM_{2.5} Nonattainment SIP (83 FR 59315; November 23, 2018).

The UDAQ, EPA Region 8, and the BRHD coordinated regarding this Cache County I/M program relaxation to ensure that the proposed I/M program changes do not interfere with State and federal air quality regulations, as required under provisions of section 110(l) of the CAA.

CAA section 110(l) allows for revisions to a SIP to be approved so long as they do not interfere with any applicable requirement concerning attainment and reasonable further progress (RFP) or any other applicable requirement of this chapter of the CAA. To evaluate the removal of the TSI test, the state prepared a CAA section 110(l) demonstration and submitted that demonstration with the Governor's November 5, 2019 submittal.

On January 13, 2020, the Governor of Utah submitted the Logan, UT-ID PM_{2.5} maintenance plan which contained the state's CAA section 110(l) demonstration for the removal of the I/M Program TSI biennial testing procedure for Cache County in 2021. Section 9 and Appendix A of the Logan, UT-ID PM_{2.5} maintenance plan shows that there will be minimal impact on the overall on-road mobile source emissions inventory within the Logan, UT-ID PM_{2.5} area. The demonstration considered on-road vehicle emissions from 2021-2026, the 2026 dispersion-modeled midpoint of the maintenance demonstration, and the dispersion modeling for 2035, which is the last year of the maintenance plan. In addition, the CAA section 110(l)

demonstration considered whether there would be interference with other NAAQS being monitored in Cache County, Utah.

The state concluded that the removal of the TSI test will not interfere with the ability of the Logan, UT-ID area to continue to attain the 2006 24-hour PM_{2.5} NAAQS, despite a very small increase in direct PM_{2.5}, nitrogen oxides (NO_x), and volatile organic compounds (VOC) emissions. The state's analysis considered emissions credit assigned to the overall I/M program, including OBD and TSI test, within Cache County within the 2021-2026 period and compared it to the emissions credit without the TSI program (OBD only). The mobile source emission estimates were based on meteorological conditions that occurred during three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. Inventory estimations were created at the county level representing an average January weekday. The emission estimates were based on the EPA-approved MOVES2014b (May 2017 version) emissions model.

In addition, the demonstration also considered PM_{2.5} ambient air quality monitoring data from the Smithfield, Cache County site and non-interference with the other five NAAQS.¹ The state's full CAA section 110(l) demonstration is included in the Governor's November 1, 2019 submittal and is also provided in the docket to this action.

The following information, as provided from the State's SIP submittal TSD Appendix A – "TECHNICAL SUPPORT DOCUMENT FOR A CAA 110(l) DEMONSTRATION FOR THE LOGAN, UT-ID PM_{2.5} NONATTAINMENT AREA," was reviewed and considered by the EPA with respect to the removal of the TSI test for 1995 and older vehicles from the Cache I/M program and the BRHD's Ordinance.

¹ Generally, 40 CFR 50.

Section 110(l) of the CAA allows for revisions to a SIP so long as it does not interfere with any applicable requirement concerning attainment and reasonable further progress or any other applicable requirement of this chapter of the CAA. The UDAQ's CAA section 110(l) demonstration addresses the removal of the I/M Program TSI biennial testing procedure for Cache County in 2021 and shows that there will be minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} nonattainment area (NAA) from 2021-2026 and demonstrates non-interference for other NAAQS being monitored in Cache County, Utah.

The removal of the TSI program will not interfere with the ability of the Logan, UT-ID NAA to continue to attain the 2006 24-hour PM_{2.5} NAAQS despite a very small increase in emissions. The state's Appendix A explains the emissions modeling assumptions used to develop the on-road mobile emissions estimates for the CAA section 110(l) demonstration. The modeling portion of the demonstration covered the EPA MOVES model service life emissions credit for the TSI program for the years 2021-2026.

The state's analysis looked at the emissions credit assigned to the overall I/M program, including OBD and TSI within Cache County within the 2021-2026 period and compared it to the emissions credit without the TSI program (OBD only). Emission estimates were based on meteorological conditions that occurred during three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. Inventory estimations were created at the county level representing an average January weekday.

Emission estimates are confined to the EPA approved MOVES2014b (May 2017) emissions model. This model produces emissions estimates for on-road vehicles by providing

emissions profiles for exhaust, evaporative, and wear conditions. Inputs include speeds, vehicle fuel profiles and specifications, vehicle miles traveled (VMT), I/M program profiles, VMT mix, vehicle age distributions, and meteorological conditions.

The state also provided additional ambient air quality analysis by comparing the PM_{2.5} SIP I/M 2015 program credit that the EPA approved for Cache County to the new proposed I/M program for 2021. Ambient air quality monitoring data from the Smithfield, Cache County site also demonstrates noninterference with the NAAQS when looking at the small increase in emissions due to the removal of the TSI program. Cache County, Utah is currently attaining the six criteria pollutant NAAQS.

The discussion below identifies the procedures the State followed to for the MOVES2014b modeling of the episodic inventories.

A local road enhancement was used to allow the EPA MOVES2014b model to produce emissions results according to the Highway Performance Monitoring System (HPMS) utilized by the Federal Highway Administration, Utah Department of Transportation, Cache Metropolitan Planning Organization (CMPO), and the UDAQ. This simplified approach allows each road type to have specific VMT, speed and vehicle distribution by road type (vehicle mix) inputs. Modeling specific road types creates an inventory approach that matches the HPMS road types that are reported within local transportation plans.

Modifications to Local Road Tables for MOVES involved: AvgSpeeddistribution roadTypeID Road types rural local(32), drivescheduleassoc avgSpeedBinID urban local(52), hourvmtfraction driveScheduleID, roadtype hourVMTFraction, roadtypedist roadDesc,zoneroadtype, and roadTypeVMTFraction.

The Pollutants selected for analysis were:

- Ammonia (NH₃)

- Oxides of Nitrogen (NO_x)
- PM_{2.5} & PM₁₀ (Primary Exhaust, Brake, & Tire)
- Sulfur Dioxide (SO₂)
- Volatile Organic Compounds (VOC)

MOVES2014b Local Model Inputs, in the County Data Manager, were developed for all of Logan, UT-ID PM_{2.5} NAA for 2021-2026, for an average weekday in January.

Cache MPO obtained average speed distributions from its 2019 Travel Demand Model. The TDM analyzes thousands of separate traffic segments called "links" that together comprise the network of roads in Cache County. Each link is assigned, for each of the four major time periods during the day (AM peak, midday, PM peak and nighttime), an average speed, an increment of VMT and an increment of VHT (vehicle hours traveled). A specific number of links are assigned to each of the UDOT HPMS functional classes (road types, e.g., rural local, urban local, rural minor arterial, urban minor arterial, and so on). In effect, average speeds, VMT and VHT for each of the functional classes are combined to obtain average speed, VMT and VHT for rural arterials, urban arterials, rural local roads and urban local roads. (There are no interstates in Cache County).

AVFT (Diesel, Gasoline, Electric Fractions) MOVES model inputs involved fuel type data provided for gasoline, diesel, flex, and electric light duty vehicles. The DMV fractions were specifically applied to all model years for passenger car and light duty trucks. (MOVES source types 21,31,32) MOVES2014a default AVFT values were used for all remaining source type vehicles (MOVES sourcetypes 40-60).

Fuel & HourVMTFraction used in the MOVES model default fuel and hour VMT fraction parameters.

HPMSvTypeYear. The Cache MPO VMT was constructed from its 2019 Travel Demand Model. UDOT Division of Systems Planning and Programming provided 2017 VMT travel

fractions for FHWA vehicle classes grouped by Gross Vehicle Weight Rating (GVWR) ranges. UDOT also provided average VMT daily adjustment factors (2016) to provide winter month and daily activity detail.

UDAQ constructed I/M Program coverage in consultation with the BRHD. The Cache County I/M program exempts the first six model years and performs a biennial test on light duty gasoline vehicles beginning in the seventh model year. Vehicles older than 1995 undergo a TSI test and vehicles newer than 1996 undergo OBD. The EPA MOVES2014b model service life emissions credit for the TSI program is essentially removed in 2026. The compliance rate was calculated utilizing EPA I/M reports and incorporated the waiver rate, total OBD and TSI failures, and regulatory class coverage UDOT Division of Systems Planning and Programming provided 2017 VMT travel fractions for FHWA vehicle classes grouped by GVWR ranges. The travel fractions were obtained by county from automated pneumatic counters that detect axle spacing and WIM counters placed on arterial, interstate, and local roads. CMPO TDM 2019 VMT and Vehicle Mix data were used to construct road type distribution and VMT by sourcetype.

For Source Type Age Distribution, the Utah Department of Motor Vehicle (DMV) provided a single age distribution for MOVES type passenger cars (21) and light trucks (31,32) for 2017. The age distribution was held constant for all years modeled. MOVES2014b default age distribution values were used for all remaining source type vehicles.

For Source Type Year (Vehicle Population), the CMPO utilized Utah DMV 2017 registration data for Model Years 2017-1969 for motorcycles, passenger cars, and light duty trucks up to 10,000 GVWR. The MOVES default vehicle fraction for these vehicles was used to determine the difference between cars and trucks since the DMV data could not discern between

a passenger car and light duty truck. MOVES 2014a default vehicle populations were used for heavy duty vehicles. The VMT growth rate from the CMPO travel demand model was used to estimate future population growth.

For the ZoneMonthHour (Meteorological Data) model input, the UDAQ Technical Analysis Section provided metrological conditions from Meso West University of Utah from three PM_{2.5} episodes: 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17. The UDAQ modeling section provided hourly temperature and relative humidity profiles from representative weather stations in Cache County. The meteorology data represents the hour by hour average for all days in the 2011 January 1-12, 2013 December 7-19, and 2016 February 1-17 PM_{2.5} episodes. The average of all the hourly temperatures and relative humidity readings over the three episodes for each representative weather station was used to reflect the atmospheric conditions that represent the PM_{2.5} season.

EPA Conclusions:

The purpose of UDAQ's CAA section 110(l) demonstration was to show the amount of emissions credit being lost by the removal of the TSI testing program in the Logan, UT-ID NAA in 2021. UDAQ presents that the demonstration shows the small amount of emissions credit being lost will not interfere with the ability of the maintenance area to continue to attain the EPA 2006 2- hour PM_{2.5} NAAQS from 2021-2026.

The MOVES model emissions trends in Table 1 (below) show the fading impact of the TSI program in terms of reduced vehicles being tested and the result of diminishing emissions credit through the 2021-2025 testing period. In the year 2021, it is estimated that the amount of pre-1996 TSI vehicles are estimated to be 1,899 vehicles. In 2025, the number of pre-1996 TSI vehicles is trending downward toward 1,341 vehicles. This is a result of the pre-1996 TSI

vehicles getting older and leaving the fleet. Meanwhile in the same period the number of vehicles that are 1996 and newer undergoing OBD is increasing. In the year 2021 it is estimated that the number of 1996 and newer vehicles will be 28,325. In 2025, that number is trending upward 30,958 vehicles being tested

In 2021, the removal of the TSI program is projected to increase emissions by an estimated .053 tons per day of NO_x and VOC emissions combined, an increase of 2.53%. This is equivalent to increasing emissions by 107 pounds per day. In 2025 the removal of the TSI program is projected to increase emissions by an estimated .036 tons per day of NO_x and VOC combined, an increase of 2.27%. This is equivalent to increasing emissions by 73 pounds per day.

Using the emissions increase from the removal of the TSI program the original 2015 I/M program would have seen an estimated increase in NO_x emissions by 11% and VOC by 13%, or a combined 12% increase. This analytical approach is conservative and does not take into account the shrinking vehicle population and emissions of pre 1996 vehicles, increase vehicle population and emissions of 2017 newer model year vehicles that meet Federal Tier 3 emissions standards, and VMT growth. The conservative analysis does indicate that the previous MOVES modeling demonstration showing a 2.53% increase in emissions in 2021 is within a reasonable range.

	Cache Attainment SIP I/M Emissions Credit for 2015 OBD + TSI			TSI I/M Credit to be removed for 2021			Cache Attainment SIP I/M Emissions Credit for 2015 OBD			Lost TSI Credit % for 2015		
	NO _x	VOC	NO _x +VOC	NO _x	VOC	NO _x +VOC	NO _x	VOC	NO _x +VOC	NO _x	VOC	NO _x +VOC
Tons Per Day	0.214	0.2	0.426	0.025	0.029	0.053	0.189	0.183	0.372	-11.45%	-13.44%	-12.44%
LBS Per Day	428	424	852	49	57	107	379	367	746			

Table 1. Cache County On-Road Mobile Source Emissions for Average Winter Weekday (Tons Per Day)

Cache County On-Road Mobile Source Emissions for Average Winter Weekday (Tons Per Day) Data																
Year	PM Test Type	NOx	NOx TPD	PM10	PM25	SO2	VOC TPD	VOC, Refuel	YMT	Vehicle Tested	NOx TPD Shortfall	NOx TPD % Change	VOC TPD Shortfall	VOC TPD % Change	NOx + VOC TPD (Total) Shortfall	NOx + VOC TPD % Change
2021	OR0 + T3	0.30	1.51	0.48	0.17	0.01	1.85	0.06	3,323,467	30,514						
	OR0	0.30	1.54	0.48	0.17	0.01	1.88	0.06	3,323,467	28,325						
	[-]T3		-0.02	0.00	0.00	0.00	-0.03	0.00		1,899	-0.025	-0.26%	-0.025	-1.25%	-0.053	-1.0%
2022	OR0 + T3	0.30	2.29	0.42	0.16	0.01	1.75	0.08	3,373,214	30,730						
	OR0	0.30	2.31	0.42	0.16	0.01	1.77	0.08	3,373,214	29,181						
	[-]T3		-0.02	0.00	0.00	0.00	-0.02	0.00		1,549	-0.011	-0.52%	-0.025	-1.41%	-0.046	-0.1%
2023	OR0 + T3	0.30	1.09	0.42	0.15	0.01	1.69	0.07	3,433,958	31,244						
	OR0	0.30	1.11	0.42	0.15	0.01	1.67	0.07	3,433,958	29,671						
	[-]T3		-0.02	0.00	0.00	0.00	-0.02	0.00		1,573	-0.018	-0.67%	-0.021	-1.25%	-0.039	-0.1%
2024	OR0 + T3	0.30	1.91	0.41	0.14	0.01	1.59	0.07	3,494,700	31,767						
	OR0	0.30	1.93	0.41	0.14	0.01	1.61	0.07	3,494,700	29,447						
	[-]T3		-0.02	0.00	0.00	0.00	-0.02	0.00		1,320	-0.012	-0.77%	-0.026	-1.64%	-0.041	-0.1%
2025	OR0 + T3	0.10	1.78	0.41	0.13	0.01	1.50	0.07	3,568,339	31,298						
	OR0	0.10	1.79	0.41	0.13	0.01	1.51	0.07	3,568,339	30,938						
	[-]T3		-0.01	0.00	0.00	0.00	-0.01	0.00		1,341	-0.013	-0.76%	0.023	1.33%	-0.036	-0.1%
2026	OR0	0.10	1.81	0.41	0.13	0.01	1.41	0.07	3,641,979	32,065						

In addition to the above discussion on MOVES modeling of emissions, the State also notes the design values at the monitor in Smithfield, Cache County are in compliance with the following NAAQS and indicate that a 2.53% increase in NOx and VOC emissions combined will not interfere with Cache County, Utah being able to attain the NAAQS.

Smithfield NAAQS Design Value						
Parameter	2016	2017	2018	Design Value (3 yr. Average)	Standard	Unit
Ozone	0.062	0.063	0.069	0.064	0.07	ppm
PM 2.5 98 %tile	34	36	27.9	33	35	µg/m ³
PM 2.5 Annual Mean	7.6	7.9	7.3	7.6	12	µg/m ³
PM 10	0	0	0	0	1	Est. Exceedances
NO ₂	37	37	30	35	100	ppb

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The table below shows the most current air quality standards for the six criteria air pollutants and Cache County's designation status with respect to each standard.

Current National Ambient Air Quality Standards and Designation Status For Cache County, UT				
Pollutant	Primary/ Secondary NAAQS	Averaging Time	Level	Designation Status
CO	Primary	8-hour	9 ppm	Attainment
		1-hour	35 ppm	Attainment
Lead	Primary and Secondary	Rolling 3 month average	0.15 µg/m ³	Attainment
NO _x	Primary	1-hour	100 ppb	Attainment
	Primary and Secondary	Annual	53 ppb	Attainment
Ozone	Primary and Secondary	8-hour	0.070 ppm	Attainment
PM _{2.5}	Primary	Annual	12 µg/m ³	Attainment
	Secondary		15 µg/m ³	Attainment
	Primary and Secondary	24-hour	35 µg/m ³	Nonattainment
PM ₁₀	Primary and Secondary	24-hour	150 µg/m ³	Attainment
SO ₂	Primary	1-hour	75 ppb	Attainment
	Secondary	3-hour	0.5 ppm	Attainment

The state's CAA section 110(l) demonstration, regarding the removal of the I/M TSI for Cache County, Utah in 2021, demonstrates there will be minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} maintenance area from 2021-2026.

In conclusion, and based on our review of the above materials, the EPA's evaluation finds that the state's CAA section 110(l) demonstration, regarding the removal of the I/M TSI for Cache County, Utah in 2021, has a minimal impact on the overall on-road mobile source inventory within the Logan, UT-ID PM_{2.5} area from 2021-2026. Further, the state's maintenance plan dispersion modeling for both 2026 and 2035 continues to show maintenance of the 2006 PM_{2.5} 24-hour NAAQS even with this I/M program relaxation. In addition, the state has documented the removal of the TSI test in 2021 will not impact the other NAAQS.

Therefore, we are proposing approval of the removal to of the TSI test component of the BRHD's Ordinance 2013-04 I/M program in 2021 for vehicles 1995 and older.

1. Subsection X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability

On November 5, 2019 the Governor submitted the below SIP revisions to Part A General Requirements and Applicability and to Part F Vehicle Inspection and Maintenance Program, Cache County. This is the version that was submitted to the EPA and is discussed below.

The revisions to “Part A, General Requirements and Applicability” include additions to section “1. General Requirements” that address revisions to Utah Code Annotated (UCA) Section 41-6a-1642 involving:

a. An amendment in 2013 to include the date that notice is required and the date the enactment, change, or repeal will take effect if a county legislative body enacts, changes, or repeals the local emissions compliance fee. Section 41-6a-1642 provides that for a county required to implement a new vehicle emissions I/M program, but for which no current federally approved SIP exists, a vehicle shall be tested at a frequency determined by the county legislative body, in consultation with the Utah Air Quality Board (UAQB), that is necessary to comply with federal law or attain or maintain any NAAQS and establishes procedures and notice requirements for a county legislative body to establish or change the frequency of a vehicle emissions I/M program;

b. An amendment in 2017 to UCA Section 41-6a-1642 to allow a county that imposes a local emissions compliance fee to use revenue generated from the fee to promote programs to maintain a NAAQS. At that time the Utah Legislature also amended 41-6a-1642 to state that vehicles may not be denied registration based solely on the presence of a defeat device covered in the Volkswagen partial consent decrees or an EPA-approved vehicle emission modification; and

c. An amendment in 2019 regarding “Notification of Programmatic Changes.” This requires that the legislative body of a county, as identified in UCA 41-6a-1642, consult with the Director of the Utah Division of Air Quality (UDAQ) before their public comment process for any amendments to their I/M regulations or ordinances. Consultation is to include a written notice describing the proposed changes to the I/M program.

The revisions to Part A, General Requirements and Applicability, also included changes to section 3, General Summary, that addressed minor wording clarifications to the subsections entitled “*Out-of-state exemption*” and “*Vehicle inspection report*.”

We have evaluated the State’s November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part A and are proposing approval.

2. Subsection X, Vehicle Inspection and Maintenance Program, Part F, Cache County

Section X, Part F of the Utah SIP addresses requirements for the implementation of the motor vehicle I/M program in Cache County, Utah. Section X, Part F of the SIP contains three main components for the Cache County I/M program: (1) the SIP language for Section X, Part F, that addresses applicability, a general description of the Cache County I/M program, and the time frame for implementation of the I/M program; (2) the Cache County Emission Inspection/Maintenance Program Ordinance 2018-15; and (3) the Bear River Health Department’s (BRHD) Regulation 2013-04. We note that the Cache County Ordinance 2018-15 contains language which delegates the implementation of the Cache County I/M program to the BRHD.

a. Under the heading “1. Applicability” the revisions to the Cache I/M program note that the Cache I/M program was approved by the EPA on October 9, 2015 (80 FR 54237), and that the I/M program has been fully implemented.

b. Under the heading “2. Description of Cache I/M program” the state describes various aspects of the revised Cache I/M program: Subject Fleet, Test Frequency, Test Equipment, and Test Procedures.

c. Under the heading “3. I/M SIP Implementation” the revisions to the Cache I/M program note that the I/M program ordinance, regulations, policies, procedures, and activities specified in the I/M SIP revision shall be implemented by January 1, 2021.

3. The revisions to Cache County’s Ordinance 2013-04, Implementation of a Vehicle Emissions and Maintenance Program in Cache County, which includes the BRHD Regulation 2013-04, amends the Table of Contents and sections, 1.0 Definitions, 2.0 Purpose, 3.0 Authority and Jurisdiction of the Department, 4.0 Powers and Duties, 5.0 Scope, 6.0 General Provisions, 7.0 Permit Requirements of the Vehicle Emissions I/M Program Station, 8.0 Training and Certification of Inspectors, 9.0 Inspection Procedure, 10.0 Engine Switching, 11.0 Specifications for Certified Testing Equipment, 12.0 Quality Assurance, 13.0 Cutpoint Standards for Motor Vehicle Exhaust Gases, renumbered section 13.0 Disciplinary Penalties and Right to Appeal, renumbered section 14.0 Penalty, renumbered section 15.0 Severability, and renumbered section 16.0 Effective Date. In addition, Appendix A, Appendix B, Appendix D, Appendix E, Appendix F, and Appendix G were also amended.

We have evaluated the Governor’s November 5, 2019 submittal of the above revisions to the Utah SIP Section X Part F with respect to the applicable provisions and requirements in 40 CFR part 51, subpart S, “Inspection/Maintenance Program Requirements,” and are proposing approval. Additional information and the EPA’s more detailed evaluation of the above materials are found in

the accompanying TSD. The entire Cache County Ordinance 2018-15, that includes the BRHD Regulation 2013-04, is in the Docket for this action.